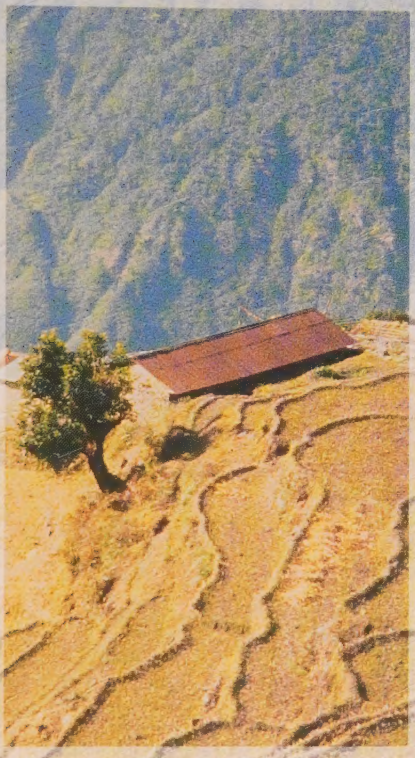
Annual Report 1993–94



Australian Centre for International Agricultural Research

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AUSTRALIAN CENTRE FOR
INTERNATIONAL AGRICULTURAL RESEARCH

ANNUAL REPORT 1993–94

FOR THE PERIOD 1 JULY 1993
TO 30 JUNE 1994

CANBERRA 1994

Acronyms and abbreviations used in this report

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AFHB	ASEAN Food Handling Bureau
AIDAB	Australian International Development Assistance Bureau
ANU	Australian National University
ASEAN	Association of Southeast Asian Nations
AVRDC	Asian Vegetable Research and Development Centre
AWCC	Australian Winter Cereals Collection
CABI	CAB International
CGIAR	Consultative Group on International Agricultural Research
CIFOR	Center for International Forestry Research
CIMMYT	International Maize and Wheat Improvement Centre
CSIRO	CSIRO Australia
DANIDA	Danish International Development Agency
EEO	Equal Employment Opportunity
FAO/UN	Food and Agriculture Organisation of the United Nations
FOI	Freedom of Information
GATT	General Agreement on Tariffs and Trade
GASGA	Group for Assistance on Systems relating to Grain after Harvest
IARC	International Agricultural Research Centre
IDRC	International Development Research Centre (Canada)
IPGRI	International Plant Genetic Resources Institute
IBSRAM	International Board for Soil Research and Management
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICLARM	International Centre for Living Aquatic Resources Management
ICRAF	International Centre for Research in Agroforestry
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
IIMI	International Irrigation Management Institute
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
INIBAP	International Network for Improvement of Bananas and Plantains
IPM	Integrated Pest Management
IRRI	International Rice Research Institute
NARS	National Agricultural Research Service
NESB	Non-English-Speaking Background
OH&S	Occupational Health and Safety
OIE	Office International des Epizootics
QDPI	Queensland Department of Primary Industries

COVER

Scientists from Australia and Nepal are working together to combat footrot disease in sheep and goats in the hill districts of Nepal. The project involves study of ways to overcome disease persistence in carrier animals and a campaign to contain the disease through immunisation.

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Notes:
1. All $ are $A, unless otherwise stated
2. The Australian financial year is from 1 July to 30 June and is indicated thus: 1993–94

SUMMARY OF REQUIRED INFORMATION

Enabling legislation	*Australian Centre for International Agricultural Research Act 1982*
Amending legislation	*Australian Centre for International Agricultural Research Amendment Act 1992*
Responsible Minister	Minister for Development Cooperation and Pacific Island Affairs, within the Foreign Affairs and Trade Portfolio
Powers, functions and objectives	See pages 8 and 10
Membership and staff	Names and terms of office of ACIAR Board of Management and Policy Advisory Council members appear on page 12. Senior staff are listed on page 14.
Information officer	Janet Lawrence, ACIAR, GPO Box 1571, ACT 2601. Telephone: (06) 248 8588
Reconciliation of appropriations and receipts to program elements	Appendix 3
Financial statements	Appendix 4.
Activities and reports	Research and Development Program: 19–32 Communications Program: 33–36 Corporate Services Program: 37–41
Subsidiaries	ACIAR is not responsible for any subsidiary companies
Industrial democracy	Provided on request*
Equal employment opportunity	Provided on request
Freedom of information	Provided on request
Occupational health and safety	Provided on request

*A list of all information included in past years and now available on request is given in Appendix 2.

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CHAIRMAN'S REVIEW

This is my first opportunity to review ACIAR's activities since taking over as Chairman of the Board and President of the Policy Advisory Council in May this year. My predecessor Professor John Dillon stepped down after serving concurrently in these positions for nine of the Centre's 12 years of history.

Professor Dillon succeeded the founding Chairman and President, Sir John Crawford, in 1985. His governance of the Centre since then steered it through its formative years and prepared it for the parliamentary review of 1991–92. The review affirmed the basis on which ACIAR was founded and also opened up new opportunities to extend and fine-tune the Centre's modus operandi.

ACIAR's important mission is to fund joint research between agriculture-related scientists in Australia and developing countries, and by this means to seek solutions to agricultural development problems and to strengthen Australian and developing-country agricultural research capacity. ACIAR funding is part of the Australian aid program. It also contributes substantially to Australian agriculture-related interests.

Australia's research capacity is important in world agriculture, and Australians play significant roles in world agricultural development. The international community faces a considerable challenge over the next generation, to meet the needs and aspirations for food consumption of a global population that continues to increase rapidly in numbers, and a substantial proportion of which is enjoying rapidly growing purchasing power.

Much of the challenge of feeding a developing world is scientific—in both the physical and social sciences. The world will have to develop new technologies for growing, distributing and using food, and to marshal its agricultural resources economically. In an efficient worldwide effort to meet the challenge, Australia is naturally and productively a supplier of scientific expertise as well as food: Australia will do well from an efficient, truly international effort. The work of ACIAR is an important part of Australia's contributions to the international effort, and an effective means of linking us scientifically and increasingly commercially into developments abroad.

ACIAR assumed the role of administrator of Australia's funds to the International Agricultural Research Centres in the 1992–93 year. It has now had time to form a clear perspective of its role in the allocation of funds, and has formulated a strategic plan to ensure that allocations to respective Centres have the potential to optimise benefits for developing countries and Australian agriculture while conforming to the international centres' prerequisite criteria.

ACIAR now contributes significantly to policy and procedures of the Consultative Group on International Agricultural Research (CGIAR). ACIAR Director Dr George Rothschild is on the CGIAR Finance Committee and also on a committee to orchestrate the establishment of a new international animal science centre from the amalgamation of two already in existence. As well, Research Program Coordinator Dr Eric Craswell is a member of a working party that explored a research initiative on rice–wheat systems for a consortium of international centres and national bodies from south Asian countries.

ACIAR has also fostered good relations with some of the centres not associated with the CGIAR. The Asian Vegetable Research and Development Centre in Taiwan acknowledged this by inviting Dr Rothschild to deliver a keynote address at its 20th anniversary celebrations.

ACIAR in 1993–94 developed and consolidated initiatives begun in previous years. In Vietnam projects commenced in forestry, land and water

resources, postharvest technology and animal sciences, and there are prospects for substantial expansion of activity in the short term. In recognition of this significant upswing Mrs Rhonda Bobbin was appointed ACIAR's first Country Manager for Vietnam early in 1994.

Membership of the Board of Management and Policy Advisory Council underwent considerable change during the year. ACIAR staff were saddened by the death of long-serving member Mr John Allwright. To mark his substantial contribution to the management and direction of the Centre, the ACIAR Fellowships Scheme has been renamed the John Allwright Fellowships Scheme.

Policy Advisory Council members Mr R. Kapila (India), Dr F. Pante (Philippines) and Australians Mr Julian Cribb, Mr Russell Rollason and Dr Meryl Williams all completed their terms of office this year, and I extend appreciation to them for their work on the Centre's behalf. I welcome new members Mr Sunil Sood (India), Dr Cielito Habito (Philippines), Mr Liu Congmeng (China), Dr Vichitr Benjasil (Thailand) and Dr Elizabeth Williams (Australia).

The format of this year's annual report has changed to give more emphasis to the results achieved during 1993–94 in relation to forecast performance. The summary chart provided in the Research and Development Section reveals considerable substance in the areas of adoption and success of technologies emerging from research, benefits to developing countries and Australia and improvements to research capacity of developing countries and Australia. As well ACIAR's status as a reputable, authoritative body in the international arena continues to grow, with recognition of the effectiveness of our projects from many quarters and growing requests for advice and consultation from ACIAR scientists.

Professor Ross Garnaut (l) became Chairman of the ACIAR Board of Management and President of the Policy Advisory Council in May 1994, succeeding Professor John Dillon. Here the two exchange greetings at a dinner held to honour Professor Dillon's nine-year commitment to ACIAR.

Ross Garnaut

(R.G. Garnaut)
President
Policy Advisory Council
Chairman
Board of Management

ACIAR'S MISSION

ACIAR's corporate mission is to improve the well-being of people in developing countries and Australia through international collaboration in research and related activities directed at the development of sustainable agricultural systems and appropriate natural resource management strategies.

ACIAR'S GOALS

ACIAR's goals, as defined in its corporate plan 1994–96, are to:

- promote productive and sustainable agriculture and the rehabilitation of degraded lands and resources, through research that results in improved agricultural and natural resource management practices
- strengthen developing country research institutions and foster links between Australian and developing country scientists and institutions
- communicate the results of ACIAR-supported research in order to encourage their adoption
- facilitate adoption of selected technologies arising from ACIAR-supported research through assisting their development
- provide quality advice to the Minister and other policy-makers nationally and globally on policies and strategies to facilitate effective and publicly accountable allocation of resources for international agricultural research
- enhance and strengthen the programs of international agricultural research centres and the benefits that flow to agriculture in developing countries and Australia
- provide a professional and supportive working environment for the people of the Centre

ACIAR'S FUNCTIONS

ACIAR's goals and program objectives stem from the Centre's functions as prescribed in the *Australian Centre for International Agricultural Research Act 1982*. These are to:

- formulate programs and policies with respect to agricultural research for either or both of the following purposes:
  - —identifying agricultural problems of developing countries
  - —finding solutions to agricultural problems of developing countries;
- commission agricultural research by persons or institutions in Australia (whether the research is to be conducted in Australia or overseas) in accordance with such programs and policies; and
- communicate to persons and institutions the results of such agricultural research.
- to establish and fund training schemes related to its research programs;
- to conduct and fund development activities related to its research programs; and
- to fund international agricultural research centres.

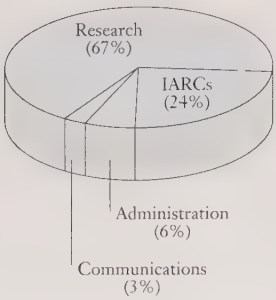
In performing its functions with respect to agricultural research, the Centre shall have regard to the need for persons or institutions in developing countries to share in that research. The Centre is not authorised to carry out research on its own behalf.

THE YEAR'S HIGHLIGHTS

- Twenty-eight major projects and 17 small projects commenced
- Australian–Malaysian commercial venture established to produce V4 Newcastle disease vaccine after successful ACIAR-funded vaccine trials
- Better, safer and cheaper control of apple moth in China using parasitic nematodes
- Bait spray techniques specially developed for the tropics shown to reduce fruit fly infestations from near 100% to only 5% in best cases
- Greater knowledge of banana diseases has prevented an outbreak of black Sigatoka disease in commercial banana plantations in north Queensland
- Eucalypt plantations in China now growing better in association with root fungi originating from Australia
- ACIAR work with Philippines Department of Agriculture helps open up live cattle exports from Australia
- Project-developed treatment against fruit flies helpful in removing quarantine barriers to sale of Australian mangoes to Japan
- Breakthrough in understanding Epizootic Ulcerative Syndrome, a major disease of fish in the Indo-Pacific Region
- In-store grain dryers being developed for Philippines and Thailand using project-developed design techniques
- Micro-irrigation research leads to production of booklet on applications of the techniques and a practical manual for orchardists by Chinese project scientists
- Thirty-four project scientists currently studying for postgraduate degrees at Australian universities under ACIAR's Fellowship Program
- Special-purpose grants instituted to link ACIAR projects with the ongoing research of the International Agricultural Research Centres and awarded to support 10 different activities
- Evaluation of the impact in Australia of wheats developed through research at the International Maize and Wheat Improvement Centre (CIMMYT) shows that Australia continues to benefit from its funding of this research
- Seventeen major scientific publications produced
- Country manager appointed to Vietnam
- Corporate plan for 1994 to 1996 produced
- Bilateral programs produced strategic plans linked with the corporate plan

A worker in a Chinese orchard demontrates spraying of microscopic nematodes onto the soil. The parasitic nematodes have proven better, safer and cheaper than other means of apple moth control.

DISTRIBUTION OF EXPENDITURE WITHIN ACIAR



STRUCTURE OF ACIAR

Programs

To achieve its goals the Centre's activities have been structured into three programs. These are laid down in the ACIAR Corporate Plan for 1994–96 as follows:

Programs	Objectives
Research and Development	
Bilateral Programs	To work with developing countries in the identification and solution of their important agricultural and natural resources management problems by: commissioning, monitoring and evaluating research conducted through partnerships between Australian and developing-country research institutions, in those fields in which Australia has special expertise; and building research capacity both in Australia and developing countries.
Multilateral Programs	To ensure the effectiveness of, and benefit to Australia and developing countries from, the allocation of funds to the international agricultural research system.
Economic Evaluation	To provide systematically based information and economic assessments to support the research activities of the Centre and to assist the evaluation of their development impact.
Communications	To contribute to successful outcomes from ACIAR-supported research and development by communication of research results to potential beneficiaries and through promoting awareness of the Centre's activities.
Corporate Services	To facilitate and contribute to the effective management of ACIAR's people and programs.

This report reviews ACIAR's progress in pursuing its corporate and program objectives in 1993–94.

Organisation

ACIAR is a small professional organisation that operates on a collegiate basis. A Board of Management has responsibility for its overall operations, while a Policy Advisory Council (comprising Australian and overseas members) provides high-level advice to the Minister for Development Cooperation and Pacific Island Affairs on research policy, priorities and research-assessment matters. The Director, as chief executive officer of ACIAR, is responsible for the efficient operation of the Centre.

Board of Management

The ACIAR Board of Management is responsible to the Minister for Development Cooperation and Pacific Island Affairs for the operations and performance of the Centre. The Board's specific functions are to:

- establish policy and planning guidelines and operational strategies to guide the Director in the day-to-day development and management of the Centre's activities and resources;

- determine the annual and long-term focus and balance of ACIAR's collaborative research and development emphasis in terms of regional, country, commodity and program priorities;
- monitor the Centre's progress towards the achievement of its objectives through systematic reviews and assessment;
- ensure that the Centre meets its statutory obligations under the ACIAR Act, including reporting on activities and financial accountability;
- apportion the annual budget in accordance with approved ministerial parameters, and endorse all research proposals.

During 1993–94 the Board met four times. One meeting was in Thailand, another in Indonesia, in conjunction with high level consultations held with those countries to discuss their agricultural research priorities. Both times the Board met with local officials and also inspected ACIAR projects. The Board's two other meetings were held in Canberra.

Members of the Board are appointed by the Governor General from among the members of the Policy Advisory Council. They are named in the Policy Advisory Council list below.

ACIAR's Board of Management held one of its meetings in Thailand this year. Members took the opportunity to visit this laboratory to see first hand project work on development of heat systems for disinfestation of tropical fruits.

Policy Advisory Council

ACIAR's Policy Advisory Council is the prime advisory mechanism for the Minister, the Board of Management and the Centre. In particular, the Council addresses policy issues concerning research needs and priorities in partner countries. Council members from partner countries played a key role in establishing ACIAR and continue to be involved closely in the affairs of the Centre.

The Council has an overview role. It gives advice on the agricultural problems of developing countries, their research priorities, and Australia's research capacities; it approves criteria for assessing priorities and choosing appropriate projects; and it sets guidelines for evaluating programs. In addition, the Council advises on modes of operation for the Centre and on sources of national and international expertise.

Members of the Council are appointed by the Minister. There may be a maximum of 14 members, a substantial number of whom are to be drawn from overseas.

The Council did not hold a meeting during the year, having met in March 1993. Its next meeting is scheduled for November 1994.

Composition of the Policy Advisory Council at 30 June 1994. Members constituting the Board of Management are highlighted in bold. Terms of appointment are given in parentheses.

Professor Ross G. Garnaut AO (1994–97)
(President, Policy Advisory Council
Chairman, Board of Management)
Professor of Economics
Research School of Pacific and Asian Studies
Australian National University, ACT

Dr Alan D. Donald AM (1988–94)
Director
CSIRO Institute of Animal Production
and Processing
North Ryde NSW

Mr Philip J. Flood AO, or his nominee (*Ex officio*)
Director-General
Australian International Development
Assistance Bureau
Canberra ACT

Dr Cielito Habito (1994–97)
Director General,
National Economic Development Authority and
Secretary of Socio Economic Planning
Philippines

Mr Liu Congmeng (1994–97)
Deputy Director General
International Cooperation Department
Ministry of Agriculture
China

Dr George H.L. Rothschild (*Ex officio*)
Director
ACIAR
Canberra ACT

Dr Kevin P. Sheridan (1989–95)
Director-General
NSW Agriculture
Orange NSW

Dr Soetatwo Hadiwigeno (1989–96)
Secretary-General
Ministry of Agriculture
Indonesia

Mr Sunil Sood (1994–97)
Secretary
Indian Council for Agricultural Research and
Joint Secretary
Department of Agricultural Research and Education
India

Sir Alkan Tololo KBE (1991–97)
Chairman
National Broadcasting Commission of
Papua New Guinea
Papua New Guinea

Dr Vichitr Benjasil (1994–97)
Deputy Director General
Department of Agriculture
Thailand

Dr Elizabeth J. Woods OAM (1991–97)
Director
Rural Extension Centre
University of Queensland
Gatton College QLD

Members whose term of office concluded during 1993–94:

Professor John L. Dillon	(1985–94)
Mr John G. Allwright AO	(1989–94)
Mr Julian H.J. Cribb	(1991–93)
Mr Ramesh Kapila, India	(1991–93)
Dr Filologo Pante Jr, Philippines	(1988–94)
Mr Russell G. Rollason	(1991–93)
Dr Meryl J. Williams	(1991–93)

Office of the Director

As Chief Executive of ACIAR, the Director is responsible for managing the Centre's operations in Australia and overseas. The Director and staff are responsible for planning, implementing and assessing a collaborative research program within broad parameters determined by the Board of Management. The Director is also responsible for ensuring that ACIAR's activities are undertaken efficiently and effectively, and that full and open accountability is maintained.

The Director of ACIAR is a statutory office holder, appointed by the Governor General. In June 1994, Dr George Rothschild was reappointed for a further term as Director of ACIAR, to July 1997.

Staffing

ACIAR's staff are employed under the *Public Service Act*. At June 30 1994 the Centre had 43 permanent staff (including two members who work part-time) and three temporary staff. The tables on pages 14 and 15 provides staffing and EEO data.

Other specialist input was secured through secondments and consultancies. During 1993–94, ACIAR also employed external consultants, specialists engaged to undertake short-term projects which assist the development or refinement of the Centre's activities, and administrative contractors.

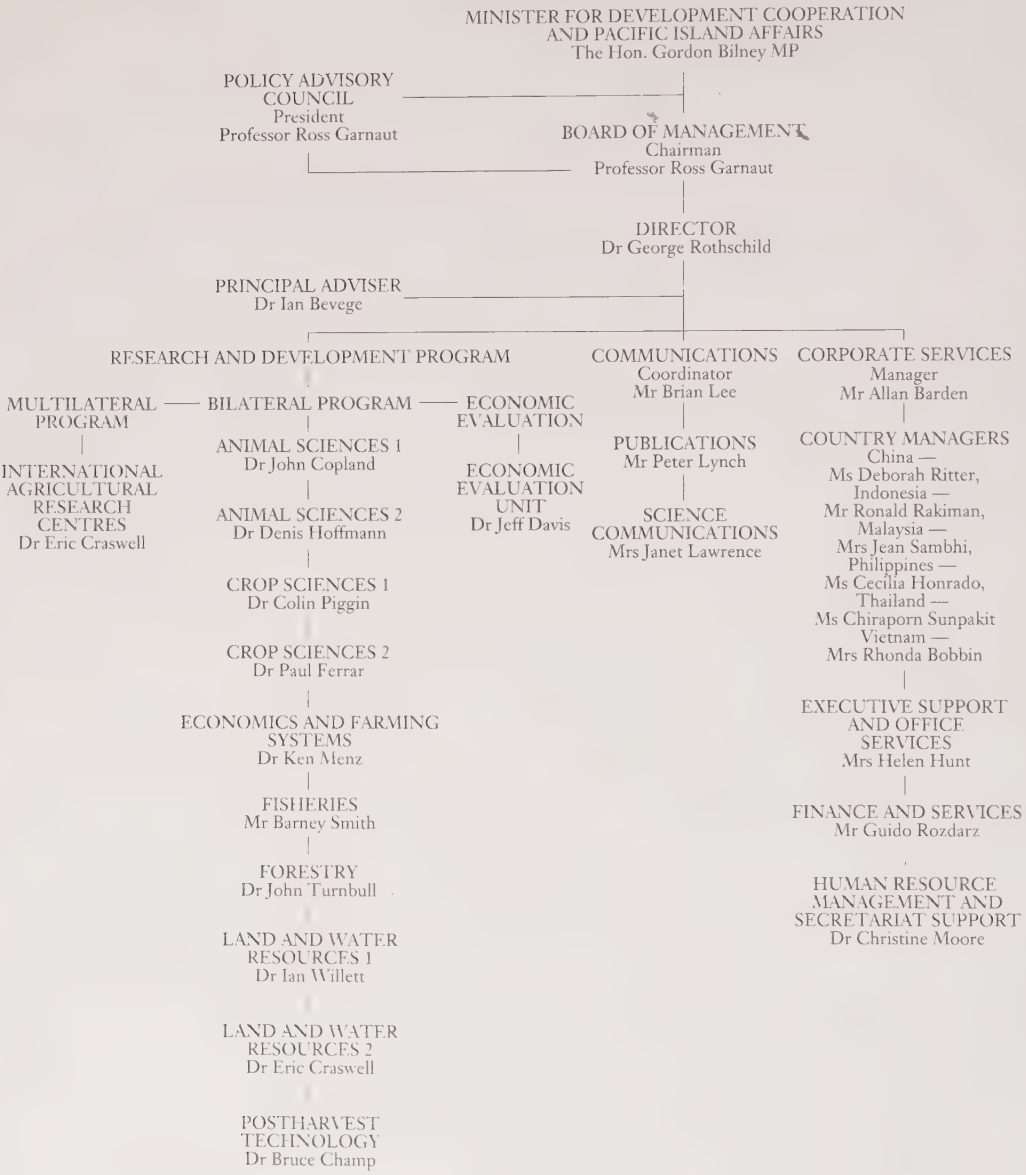
Overseas program support

ACIAR has overseas offices in six countries—China, Indonesia, Malaysia, Philippines, Thailand and Vietnam. The Vietnam office was established during the year, and Mrs Rhonda Bobbin was appointed inaugural Vietnam country manager. These offices provide guidance for local research institutions in the development, establishment and administration of collaborative projects, and assist visiting Australian project staff by arranging itineraries and meetings and providing general in-country support. Overseas staff also provide an important link between partner scientists in Australia and the relevant overseas research organisations.

Overseas managers and staff are located in Australian Embassies or High Commissions. Their names and locations are listed on the ACIAR Organisation Chart on page 14.

Mrs Rhonda Bobbin was appointed ACIAR's first country manager in Vietnam during the year.

ACIAR ORGANISATION (30 June 1994)



ACIAR staff and EEO data by classification as at 30 June 1994 (includes temporary staff).[1]

	Sex		Non-English-speaking background			
Classification	M	F	No	NESB1[2]	NESB2[2]	Total
Senior Executive Service (including Director as statutory office holder)	2		1	1		2
Senior Principal Research Scientist	8		8			8
Principal Research Scientist	2		1		1	2
Senior Officer Grade A (and equivalent)	2		1		1	2
Senior Officer Grade B (and equivalent)	2		1	1		2
Senior Officer Grade C (and equivalent)		3	3			3
Administrative Service Officer Class 6 (and equivalent)	1	4	3	1	1	5
Administrative Service Officer Class 5	1	1	1	1		2
Administrative Service Officer Class 4		10	10			10
Administrative Service Officer Class 3	1	3	3		1	4
Administrative Service Officer Class 2	1	4	3	1	1	5
Administrative Service Officer trainee		1	1			1
Total	**20**	**26**	**36**	**5**	**5**	**46**

[1]ACIAR has no staff members who identify as having a disability or members who identify as being of Aboriginal or Torres Strait Islander descent.

[2]NESB1 denotes people of first generation non-English-speaking background; NESB2 denotes those of the second generation.

HOW ACIAR OPERATES

History

ACIAR is a statutory authority established by the passage of the *Australian Centre for International Agricultural Research Act* in June 1982. Its functions were modified following the passage of the *Australian Centre for International Agricultural Research Amendment Act 1992* in December 1992. Its original establishment was a response to the view that had been growing during previous years that Australia could make a special contribution to development through sharing its agricultural research expertise.

During 12 years of operations ACIAR has commissioned around 270 major research projects, usually over 3-year periods. So far at least 185 have been completed, although many have been replaced by similar projects that take aspects of the initial projects further.

ACIAR has achieved significant progress through research in the following areas:

- introduction of low-cost fertiliser and soil management practices for acid, infertile, sloping and degraded soils in the Asian, African and Australian tropics that encourage sustainable agriculture and rehabilitate degraded lands
- provision of economic information and recommendations on agricultural commodity policies to assist government agencies in a number of countries
- selection of Australian trees and shrubs for fuelwood, agroforestry and industrial needs of developing countries, and promotion of salt-tolerant species to restore lands degraded by salinisation
- development of environmentally safe, appropriate technologies that have improved the health and productivity of animals owned by smallholder farming communities
- development of more productive, disease-free lines of some traditional crops of Southeast Asia, Africa and the Pacific, such as coconut, banana, sweet potato and cassava
- control of serious pests and weeds in Asia, Africa and the Pacific through techniques of biological control and integrated pest management
- development of improved methods for the safe postharvest handling, processing, storage, transport and marketing of both durable and perishable food commodities, especially in the humid tropics of Asia
- gathering of information about subsistence and commercial fisheries that permits management for sustainability

Specific achievements against performance objectives are listed at the beginning of each major program report. Each component of the Research Program also lists its own research highlights.

Financial resources

The Centre's appropriation from the Australian Government's official development assistance budget for 1993–94 was $33.67 million, representing real growth of $2.0 million over the previous year. There was a committed carryover of $1 144 404 in the ACIAR Trust Fund from the 1992–93 appropriation and other receipts during 1993–94 of $41 572, making a total of $34 855 976. The Centre's total payments amounted to $33 238 663.

Mode of operation

ACIAR's mandate directs it to mobilise Australia's research capacity to help solve agricultural research problems of developing countries. Thus, the promotion of development-related research collaboration between Australia and individual developing countries remains ACIAR's primary aim. The Centre itself does not carry out research, but brings together research institutions in Australia and partner developing countries to work together on problems of mutual interest and benefit, in fields in which Australia has comparative advantage. ACIAR projects are implemented through contractual arrangements with such Australian organisations as State agricultural departments, universities and CSIRO. The Rural Industry Research and Development Corporations and private industry may also be involved.

ACIAR's research program coordinators have the key role of identifying research priorities, investigating joint research opportunities, planning and developing research programs, managing technical resources, receiving and managing supporting funds, monitoring and coordinating projects, and organising periodic reviews. ACIAR's Economic Evaluation Unit supports the coordinators in the project design phase through its process of commodity assessment and appraisal activity, and undertakes project or program evaluations to measure impact.

ACIAR project funds are used to enhance high-priority programs in developing countries and Australia. Projects are designed to help solve important problems and to build scientific research capacity in recipient countries. All projects are reviewed after a suitable interval and, depending on their objectives and achievements, may be terminated, extended, or replaced. ACIAR, the commissioned Australian institutions and the partner developing-country institutions all invest substantial resources in each project. On average collaborating institutions contribute $0.75 for every $1 provided by ACIAR.

ACIAR funds training and development activities to assist the progress and implementation of its research. The Centre also has an active Communications program to ensure that results are widely known, thus increasing the likelihood of their adoption.

ACIAR's approach provides the basis for a cost-effective form of aid management. Moreover, by building onto existing priority programs and capacities in developing-country and Australian research institutions, the Centre's programs can gain from using facilities and equipment already in place.

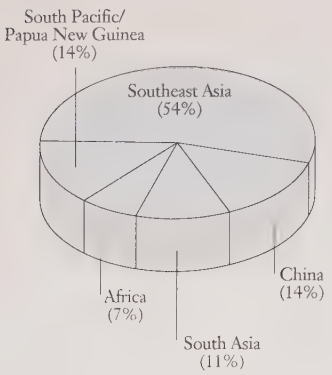
Statutory authority status

The Centre needs organisational flexibility to respond to the variety of research problems in the countries where projects take place. ACIAR's status as a statutory authority provides this flexibility, and enables it to maintain a highly professional, responsive and interactive approach both in developing countries and in Australia. Following the parliamentary review of ACIAR in 1992, the Government fully endorsed the recommendation that ACIAR continue as a statutory authority located within the Foreign Affairs and Trade portfolio.

The Centre follows the Government's *Guidelines for Commonwealth Statutory Authorities and Government Business Enterprises* (October 1987), which emphasise performance-oriented management practices and accountability to Parliament and to the Minister.

ACIAR brings Australian and partner-country scientists together to work on problems of mutual interest and benefit. In this instance Dr Zan Mazanec from the CSIRO Division of Entomology discusses a leaf mining insect which was destroying Malaysian street trees with Dr Khairul Anwar bin Hasan.

ACIAR RESEARCH EXPENDITURE BY REGION



Implementation arrangements

Research projects with partner countries are conducted through formal arrangements that set out principles governing the collaborative relationship. Depending on the partner country, the in-country arrangements can take the form of a general government-to-government Memorandum of Understanding for the whole program, of a more specific umbrella agreement between ACIAR and the major implementing institution of the partner country, or a project-specific Memorandum of Understanding between ACIAR and a partner country's collaborating institution.

Specific project arrangements (documents) between ACIAR, the Australian commissioned organisation and the counterpart agency overseas are agreed and signed under all the above arrangements. Specific project agreements are made between ACIAR and the Australian commissioned organisation.

Benefits and spillovers from projects

Benefits from ACIAR programs and projects are summarised in the Research Program Section of this report. Research benefit is often optimised by developing a project involving several partner countries working with the same research group in Australia. In some cases, these partnerships are further enhanced by linking with one of the international agricultural research centres with expertise in the same field. Thus useful results may spill over to countries and regions of the developing world outside the immediate scope of ACIAR's projects.

Geographic mandate

ACIAR's policy on the geographic distribution and emphasis of its activities reflects Australian government policy and the advice of the Centre's Policy Advisory Council. But the Centre still has sufficient flexibility to respond to real rural development needs. The policy places the primary focus of ACIAR's collaborative research activities on Australia's near neighbours in Southeast Asia, countries of the South Pacific and Papua New Guinea.

Joint research in southern Asia, especially on problems requiring a more strategic research approach, is undertaken where the results of the research will also benefit other developing countries not in the region. Likewise the research program with China must continue to be well-focused in those fields that will yield the greatest mutual benefit to both China and Australia, and to developing countries in general.

Activities in sub-Saharan (including southern) Africa concentrate on those areas of research that will contribute most to the long-term solution of chronic food problems and shortages of fuelwood in semi-arid regions. ACIAR's mandate does not preclude cooperation in West Asia, North Africa and Latin America, but the Centre believes that cooperation in these distant regions will be more effective when channelled through the relevantly placed international agricultural research centres.

RESEARCH AND DEVELOPMENT PROGRAM

Expenditure in 1993–94 — $30 190 319

Proportion of ACIAR expenditure: — 90.8%

Program components

Bilateral Programs

Animal Sciences
Crop Sciences
Economics and Farming Systems
Fisheries
Forestry
Land and Water Resources
Postharvest Technology

Multilateral Programs

International Agricultural Research Centres

Economic Evaluation

Economic Evaluation Unit

BILATERAL PROGRAMS

Achievements against performance indicators in the Corporate Plan, 1993–94

1. Number of project ideas assessed and projects actually developed, commenced and successfully completed.

- Programs received 81 project ideas, both solicited and unsolicited. Additional ideas for projects were raised at consultations in Thailand, the South Pacific Region and Indonesia
- Twenty-five ideas were selected to present as project proposals to the Centre's In-house Review Committee for assessment; and 23 of these were recommended for development as full-scale projects
- Twenty-eight 3-year projects and 17 small projects commenced, and also 10 special purpose grants to international agricultural research centres. Fourteen major projects concluded.

2. Adoption and success of technologies emerging from the research program.

- Australian–Malaysian commercial venture established to produce V4 Newcastle disease vaccine for use in feed vaccination programs for village chickens
- Findings of an ACIAR project instrumental in setting up a forest reserve on the island of Erromango, Vanuatu
- The results of the ACIAR sponsored research projects on grain drying are publicised in international journals such as Drying Technology and at international conferences (e.g. 6th International Working Conference on Stored-product Protection)
- Micro-irrigation of fruit trees in northern China has now been further developed and the technology is ready for wider application
- Research in India has shown that zinc deficiencies can be addressed by fertiliser applications every four years rather than the usual practice of once a year
- Farmers in China getting better, cheaper and safer apple moth control with parasitic nematodes
- Fruit farmers using bait sprays getting greatly reduced levels of fruit fly damage—from near 100% to less than 5% infestation in best cases.
- Project scientists have introduced the disease-resistant 'Goldfinger' banana, developed in cooperation with international research institutions, to new plantings in Australia and the South Pacific
- ACIAR supported tissue culture laboratories have developed an ELISA kit to test planting material for banana bunchy top disease and thus prevent the disease from spreading
- Increased experience with exotic diseases has prevented an outbreak of black Sigatoka in commercial banana plantations in north Queensland
- Kava dieback disease in the South Pacific, found to be caused by cucumber mosaic virus, can be controlled in farmer fields by using disease-free planting material and removing infected plants as soon as symptoms appear
- Growth promotion of eucalypt seedlings by inoculation with ectomycorrhizal fungi now becoming routine in plantings in southern China
- Newly developed nursery and plantation technologies now being applied to establish sandalwood plantations in eastern Indonesia

3. Extent of the scientific, economic, social and environmental benefits attained, both in developing countries and Australia.

- Bali cattle in Indonesia found to derive protection against Jembrana disease by vaccination with inactive tissue-derived antigens, opening up the possibility of controlling the disease
- Several previously unrecognised differences in strains of infectious bronchitis virus disease (IBD) of poultry have been recognised in China. This has important implications for efficacy of current IBD vaccines
- Scientists identifiy the marker gene associated with the high tendency for multiple births in Indonesian thin-tailed sheep
- Intersectoral model of Thai economy determined to have economic benefits for poverty prone areas of rural Thailand and, through trade liberalisation, to Australia
- ACIAR work with Philippines Department of Agriculture helps open up live cattle imports from Australia
- Major breakthroughs in our understanding of Epizootic Ulcerative Syndrome which affects fish throughout the whole Indo-Pacific region
- Research on the coconut crab condensed into an attractive easy-to-read brochure, which will be distributed in Vanuatu to raise awareness of this endangered species
- Publication of a 'Coral Sea Region Billfish Atlas' will be of considerable use to fisheries and the gamefishing industry, especially in Vanuatu, Papua New Guinea and Solomon Islands
- Identification in Vietnam of a project on two-stage drying of paddy and maize, with in-store drying as the second stage; an industrial collaborator selected for large-scale trials, aiming at becoming an example for other adopters
- Drying strategies devised that are capable of reducing build-up of fungal toxins in maize in medium-scale storages in Thailand
- Activities assisted in removing quarantine barriers to Australian mangoes for Japan as a result of a successful disinfestation treatment against fruit flies
- Design techniques, based on the drying simulation model developed jointly by the University of NSW and research organisations in Thailand and the Philippines, have been used to produce blueprints of in-store dryers for agricultural co-operatives in these two countries
- Collaborative research has provided an understanding of the responses of fruit flies and fruit to heat treatment which will significantly enhance efficiency in disinfestation development to remove quarantine barriers

4. Improvements in the research capacity of developing countries and Australia.

- Chinese scientists and extension staff are now able to remedy production constraints in sheep due to mineral deficiencies; production of mineral blocks by a joint venture in China is under consideration
- Workshops in Fiji and Honiara to teach the practicalities of fish stock assessment methodology and analytical techniques attended by representatives from Fiji, Solomon Islands and Papua New Guinea
- Project people from Indonesia and Philippines received training in mycology at a workshop held in Wollongbar, NSW
- A Solomon Islands fisheries scientist attended training in development and management at the CSIRO workshop held in Thredbo, NSW
- The Thailand National Foundation Fund has promoted cooperation between different national organisations working in the area of grain drying, leading to the establishment of a research program including Thailand's Department of Agriculture, the Australian–Thai Cooperative Project and King Mongkut's Institute of Technology
- Chinese scientists have produced a detailed publication on applications of micro-irrigation and regulated deficit irrigation of fruit trees, plus a practical manual, for use in China
- ACIAR research is leading to greater experience in biological control of insect pests and weeds in a number of countries
- Better knowledge of fruit fly faunas, leading to better control strategies and quarantine protocols to permit exports of certain fruits and vegetables

5. Recognition of the utility and effectiveness of our projects by our professional peers, Government and the public, both in the countries concerned and in the scientific community at large

- ACIAR research on Newcastle Disease V4 vaccine has led to an FAO-supported project to extend the benefits and utilisation of the vaccine to Africa. The former project leader, Professor Spradbrow, is the technical advisor to the project
- Australian forest managers are now encouraging bee keepers to place their hives in *Eucalyptus globulus* seed orchards, as it has been shown that the introduction of bees significantly increases seed yield.

- ACIAR, in collaboration with the ASEAN Food Handling Bureau, Canada Agriculture, and the UK Natural Resources Institute, prepared a 'Position Paper of Mycotoxins in Food and Feedstuffs in the Asian Region'
- In collaboration with CSIRO and the Australian grain industry, the 6th International Working Conference on Stored Product Protection was convened in Canberra in April 1994
- An international conference, 'Postharvest Handling of Tropical Fruit' was organised in Chiang Mai, Thailand, in July 1993 in collaboration with the Thai Department of Agriculture, Chiang Mai University, and the ASEAN Food Handling Bureau

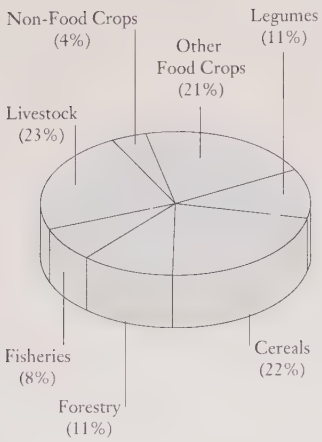
6. Extent to which Government, industry and the rural, scientific and international community seek advice from us.

- Dr John Copland, Animal Sciences Research Program Coordinator, held the following advisory positions: advisory group on the review of Australian fish quarantine for the Department of Primary Industries and Energy; selection of development projects to be supported by AIDAB; International Committee for the seventh Australian–Asian Animal Production Congress held in Indonesia; Animal Health and Production Commission/FAO and the Office of International Epizootics (OIE, IDRC) on matters relating to animal production and foot-and-mouth disease control
- The CGIAR sought ACIAR's advice on the development of the new International Livestock Research Institute and on Asian research priorities
- Prof Peter Warr, of ANU, leader of the Thailand intersectoral economic modelling project, has been appointed Special Adviser to the Secretary General of the Office of Agricultural Economics in Thailand
- Scientists studying the fish disease Epizootic Ulcerative Syndrome (EUS) made a major contribution to the International EUS Workshop in Bangkok in February 1994
- Outcomes of the EUS study have strongly influenced the establishment of the Acid Sulphate Soil Management Advisory Committee
- Two scientists from the pearl oyster project addressed the inaugural Pearl Oyster Consultation in north Queensland
- Fisheries Program Coordinator Mr Barney Smith was a councillor to the 13th Asian Fisheries Society Meeting and the 3rd Indian Fisheries Forum, Pantnagar, India, October 1993
- Postharvest Program Coordinator Dr Bruce Champ was invited to be adviser to the China National Applied Technique Research and Services Centre for Stored Grain Insects Control
- Skills and knowledge developed in the response of fruit to heat disinfestation treatments resulted in invitations to participate in an international workshop on this subject
- Land and Water Resources Program Coordinator Dr Eric Craswell led a team from the International Board for Soil Research and Management (IBSRAM) to determine soils research priorities in international agriculture
- Project leader Dr Somchart Soponronnarit from King Mongkut's Institute of Technology, Thailand, provided consultancy services on design of in-store dryers to the Australian–Thai Cooperative Project funded by AIDAB
- Project leader Dr Peter Jerie awarded a Friendship Certificate and Medal by Premier Li Peng, and made an honorary professor of Beijing Agricultural Engineering University, for his work on micro-irrigation and regulated deficit irrigation of fruit trees in China
- Dr John Turnbull, Research Program Coordinator, Forestry, undertook consultancies to review the tree seed program for DANIDA and review forest research for China's national afforestation program
- ACIAR advised the Center for International Forestry Research (CIFOR) on development of its strategic plan
- Principal Adviser Dr Ian Bevege was a member of the FAO Forestry Advisory Group on the Tropical Forestry Action Programme and the ADB/FAO Advisory Group on Forest Research Support Programmes for the Asia–Pacific

*7. **Number of fellowships and related training activities awarded and successfully completed.***

- Thirty-four ACIAR project scientists are currently studying for postgraduate degrees at Australian universities under the John Allwright (formerly ACIAR) Fellowships Scheme
- Forty-four applications considered under the Fellowships Scheme and eight awards offered to commence study in the 1995 academic year
- ACIAR and the Crawford Fund for International Agricultural Research sponsored a workshop at Monash University that trained 18 scientists from 12 countries in molecular biology techniques

DISTRIBUTION OF ACIAR FUNDS BETWEEN COMMODITIES



Bilateral Programs Objective

To work with developing countries in the identification and solution of their important agricultural and natural resources management problems by:

- commissioning, monitoring and evaluating research conducted through partnerships between Australian and developing-country research institutions, in those fields in which Australia has special expertise; and
- building research capacity both in Australia and developing countries.

Criteria for supporting projects

The criteria used for assessing research proposals to ACIAR, which were laid down by the ACIAR Board of Management, remained essentially unchanged during 1993–94. Proposals for collaborative research projects must satisfy the following requirements to be considered for ACIAR support:

1. Approaches to ACIAR should be made formally through agreed developing-country national research organisations, and have their endorsement.
2. ACIAR should respond to research priorities established by potential partner countries—the 'push' must come from the developing countries. ACIAR makes these countries aware of Australia's research capabilities and its capacity to respond, and indicates whether the proposed project falls within ACIAR's own priorities.
3. Research projects should be planned jointly so that there is a partnership from the beginning. The plans must be explicit, stating what will be done by both sides, and provide a timetable of proposed activities.
4. Where possible, ACIAR support should capitalise on existing strengths in Australia, and also in the developing country, to ensure that the commitment is real and that support will enhance the prospects for successful research. Some assurance that the activity is sustainable and will continue after ACIAR support ceases is also sought.
5. Research supported by ACIAR must focus on soluble problems that will give results having a wide application in developing countries, and bring mutual economic and scientific benefits both to developing-country partners and Australia.

In addition, despite the obvious need in most countries for effective applied field research, there is a growing demand by developing-country scientists to gain access to 'state of the art' science where appropriate facilities are available. ACIAR also commissions projects that fit this category.

Project identification and design

The cycle of project development and implementation also remained essentially unchanged during 1993–4. The Centre continued to evaluate projects under development, those under way, and those nearing completion by a process of review and monitoring.

Pre-implementation appraisal Following preliminary endorsement by the Board of Management, project proposals are developed into detailed documents, assisted by an in-house appraisal process to which the Centre's scientific staff all contribute. Proposals are then submitted for peer review to at least two external reviewers, who assess the merits of the proposed projects.

The Centre places particular emphasis on the issue of priority assessment, and an effective project-level system has been developed, based on commodity groupings for each of the geographical regions of interest. This task is handled by the Economic Evaluation Unit.

Monitoring Each project is monitored regularly by the appropriate ACIAR research program coordinator, usually in conjunction with a project coordinating committee. The committee examines overall research progress and any issues of concern during an annual review.

Implementation reviews Final external peer reviews of 19 projects were undertaken during 1993–94. Most projects are peer-reviewed externally prior to completion. ACIAR commissions expert reviewers from the developing-country partner and from Australia or another developed country. Reviewers assess the degree of progress made towards achieving stated research objectives, the scientific merit of the project, its relevance to the collaborating countries, and the benefits that have resulted.

Reviewers also assess the extent to which the project has achieved true collaboration and strengthened the research capacity of participating scientists, the adequacy of the reporting of results, the effectiveness of project administration and the possibility of follow-up work.

The Economic Evaluation Unit contributes to the final assessment of projects by analysing the economic implications of the research that has been undertaken.

Dr Unesu Ushewokunze-Obatolu, ACIAR project leader from Zimbabwe, spent some time at the Tick Fever Research Centre, Queensland Department of Primary Industries, during her visit to Australia in August 1993. Here she meets with (l–r) Dr Bob Dalgliesh, QDPI, Ms Jo Hayter, Overseas Service Bureau, Dr Joan Opdebeeck, University of Queensland and Dr Denis Hoffmann, ACIAR.

Project portfolio

During the year 91 major research projects were under way in 23 countries. Of these, 27 commenced and 14 concluded. A full list of projects and countries is given in Appendix 1.

ACIAR has now established a collaborative research program with Vietnam. Five major projects and five small projects are in place, encompassing animal health, use of Australian trees, fisheries management, use of acid soils for crop production and postharvest grain storage. At year's end the Centre was developing research linkages with Bangladesh.

Research highlights

- Malaysian scientists working in collaboration with Australian scientists identify five new types of bluetongue virus in Malaysia.
- Studies determine the life history and ecology of two bee mites affecting honey bees in the highlands of Papua New Guinea, opening the way for testing of various control methods.
- Trials of a foot-and-mouth vaccine produced in Thailand have shown its effectiveness against a number of different strains of the disease present in livestock in Thailand.

Animal Sciences

Expenditure for 1993–94 — $3 845 800 (cash basis)

Proportion of research expenditure — 12.7%

Objectives

To assist research organisations in Australia and in developing countries to come together in a farming systems context to find sustainable solutions to shared animal production and health problems.

Program progress

The program has 10 major projects that started before July 1993 and continued through this financial year; also 10 ongoing small projects and another five that finished during the year. Five of the major projects underwent reviews as they neared completion dates later in 1994.

Three projects commenced, all in the area of animal health. The first one, which builds on a successful project with Malaysian scientists, aims to diagnose and study bluetongue disease in China. Bluetongue, which mainly affects sheep, is known to occur throughout Asia but until recently the strains involved have not been known. This knowledge will allow better control methods to be introduced.

The second project is looking at the importance of haemorrhagic septicaemia in Indonesia and developing better ways to diagnose it. Since this disease of cattle and buffalo is of significant concern for most of the developing world, results from this project should have widespread benefits.

The third project is a combined epidemiological and economic study of important livestock diseases exotic to Australia but established in Asia. Scientists will develop animal health information systems that allow all partner countries to monitor and evaluate the social and economic importance of animal health issues.

Scientists associated with the ACIAR project on foot-and-mouth disease were involved in a major workshop, which took place in Thailand. Many of the results of the seven years of ACIAR research were presented at the workshop.

Research highlights

- Parasitic nematodes demonstrated to control apple moths in China, and many pests of other crops; now proceeding to full commercialisation.
- Biological control organisms supplied to countries against six different pests and biological control reference books published for Asia and the Pacific.
- Peanut varieties tested in India showed large cultivar variability in tolerance to moisture stress, indicating potential for better pod yields under drought.

Crop Sciences

Expenditure for 1993–94 — $4 856 525 (cash basis)

Proportion of research expenditure — 16.1%

Objective

To improve the productivity, profitability and sustainability of field and horticultural crop farming systems in developing countries and Australia, and improve utilisation of crop outputs.

Program progress

The program managed 19 active projects and five additional small grants during the year. Seven major projects started and seven concluded; one small project also commenced.

A concerted effort has been made to integrate the program with the activities of other ACIAR programs, and other agencies, including the international agricultural research centres and the Australian rural industry research and development corporations.

Current major research thrusts are: genetic conservation, agronomy, physiology and protection of horticultural crops, cereals, food legumes, forages and oilseeds. There has also been a concerted effort to study temperate crops this year.

One part of the program is using molecular biology techniques to characterise genetically four plant diseases which have proven difficult to control by conventional means and to engineer plant resistance to them. These projects are also developing plant molecular biology expertise in partner countries.

In crop protection, biological control projects started against green vegetable bug in Papua New Guinea and fruit piercing moth in Fiji, Tonga and Western Samoa, and projects continued against water hyacinth and giant sensitive plant in Asia. ACIAR's first integrated pest management (IPM) project, against citrus pests in China, also started.

Other new areas of work during the year were nutritional analysis of food crops in Fiji, and novel tissue culture techniques for rapid mass propagation of green tea for smallholders in Indonesia.

Two highly successful research undertakings concluded. One concerned the use of tiny parasitic nematodes to control insect pests in China, as an environmentally safe alternative to chemical pesticides. The other studied fruit flies of economic importance in Southeast Asia and the South Pacific and developed an environmentally acceptable means to control them.

Economics and Farming Systems

Expenditure for 1993–94 — $1 734 735 (cash basis)

Proportion of research expenditure — 5.7%

Objective

To identify and promote agricultural policies and technologies for economic development.

Program progress

The program consists of 11 active projects. Three projects commenced during the year while one concluded. Three projects have been granted short periods of extension that will carry them into the first few months of 1994–1995.

One project has produced a model of the Thai economy, focusing on the interactions between the agricultural sector and the rest of the economy. Despite economic growth, many rural people in Thailand are desperately poor, and the consequences of policy change (particularly on income distribution of these disadvantaged groups) are a major feature of the model.

Another project now concluding has examined the demand for beef and live cattle in the Philippines, as well as the attendant legislation in the Philippines regarding protection policies for the Philippines livestock sector. Through working with the Department of Agriculture in the Philippines a number of liberalising changes have been implemented in the Philippines in relation to cattle imports from Australia. These changes will help ensure the maintenance of the strong trade in live cattle from Australia to Southeast Asia.

A substantial ACIAR-funded research effort has examined alternative uses (primarily logging) for a proposed kauri reserve on Erromango, Vanuatu, and determined values that can be ascribed to those uses in order to deter-

Research highlights

- An ACIAR project has been instrumental in helping to set up a forest reserve on the island of Erromango, Vanuatu. This reserve will be the first land ecosystem reserve in Vanuatu once the final legal mechanisms are put into place.
- Completed intersectoral model of the Thai economy found useful for analysing the effects of policy changes (including those related to GATT) on poverty alleviation.
- Liberalisation of Philippines imports of live cattle from Australia partly as a result of ACIAR project with Philippines Department of Agriculture.

mine a fiscal basis for compensation of lost income to the custom owners when the land is set aside as a reserve. It has led to the signing of a letter of intent for a lease agreement between the owners and the Vanuatu Department of Forestry to establish the first land ecosystem reserve in Vanuatu.

Research highlights

- Epizootic Ulcerative Syndrome linked to acidified runoff water and other water quality changes, indicating new research directions for control and prevention of this important fish disease in Australia and Asia.
- Questionnaires, along with creel and consumption surveys, have produced better descriptions of subsistence fishing activities in Fiji that have wide potential application for other Pacific Island countries.
- A genetic study of mangrove crabs from across their biogeographical range has determined that there are at least two distinct species.

Fisheries Program

Expenditure for 1993–94 — $1 390 039 (cash basis)

Proportion of research expenditure — 4.6%

Objective

To develop and coordinate a program directed at solving key problems constraining the productive use and sustainability of fisheries and aquatic resource systems in developing countries; to maximise benefits for target community groups in developing countries and to contribute to regional research initiatives.

Program progress

Activities span two major areas of research interest: 1) wild harvest fisheries and issues related to their responsible management; and 2) aquatic farming systems and mariculture, including sea ranching and resource enhancement. The program coordinates six major projects, three of which commenced during the year. Six small projects are exploring promising new avenues for research or providing a more flexible and efficient response to the special needs of the smaller Pacific Island countries.

Six years of ACIAR support to tuna baitfish research in the Pacific Islands ended during the year. Potential spillover benefits of this work to the East Indonesian fishery are now being examined.

The study of Epizootic Ulcerative Syndrome (EUS) has contributed significantly to understanding of the link between water quality changes and disease onset, which suggest new avenues for research on mechanisms for control and prevention. In a project on flow-through larval culture systems for black lip pearl oysters initial trials have been promising, while wild stock surveys in Kiribati have confirmed that many lagoon oyster populations are severely depleted. In Fiji and Malaysia studies of tilapia broodstock have genetically characterised existing strains, with productivity trials now under way to evaluate the relative performance of each strain.

Other studies include: subsistence fisheries in Fiji, where project participants have developed a methodology suited to Fiji and other Pacific island countries; a genetic study of mangrove crabs of the Indo-Pacific, which has found there are at least two distinct species; and research on trochus shellfish in three Pacific Island countries, which has involved wild stock assessment and reef reseeding trials.

Forestry

Expenditure for 1993–94 — $2 858 061 (cash basis)

Proportion of research expenditure — 9.5%

Objective

To identify and solve important forestry and natural resource management problems through a program of strategic and applied research to assist the introduction, domestication, management and utilisation of trees and shrubs suited to specific needs in Australia and developing countries.

Program progress

The program managed 11 major projects in 14 countries plus two small projects which finished during the year. ACIAR also supports core activities in CSIRO's Australian Tree Seed Centre, which supplies germplasm of Australian trees and shrubs for research in developing countries.

One project has identified promising species for the shallow alkaline soils on Sumba Island, Indonesia, and shown that *Rhizobium* bacteria inoculation increases growth of some acacias in West Timor. New techniques to cultivate sandalwood have aroused Timorese interest in planting the tree, and there has been progress in sandalwood trials at Kununurra, Western Australia.

Another project has shown that mycorrhizas (root–fungi associations) enhance growth of eucalypts on nutrient-deficient sites in Western Australia and China. In the Philippines and China trees have responded to additional phosphorus and boron. Another project has conducted nursery trials in Solomon Islands, Vanuatu and north Queensland that determined the nutritional and mycorrhizal requirements of tropical trees.

In Thailand, a project to improve and sustain productivity of eucalypts has indicated major improvements to seed quality from seed orchards of *Eucalyptus camaldulensis*, and field trials of a prototype mobile distillation unit built locally to extract eucalypt oil are under way.

In another project, extensive databases of climatic and soils data used for predicting tree growth for general regions and specific sites in China and Thailand have been assembled. The project links with AIDAB-funded studies in Vietnam and Indonesia.

CSIRO's Australian Tree Seed Centre staff ran a course on practical tree breeding for overseas tree breeders. They made advisory visits to Eritrea, Kenya and Zimbabwe, completed successful seed collections of arid-zone acacias and tropical acacias from Cape York, and launched the Lao version of the book 'From Seeds to Trial Establishment'.

Research highlights

- High-yielding families of *Eucalyptus camaldulensis* identified for use in Thailand's tree breeding program.
- Techniques developed and tested for the successful nursery propagation and field establishment of sandalwood, *Santalum album*, in Indonesia and Western Australia.
- Optimum levels of phosphorus fertiliser and micronutrients, especially boron, shown to improve the growth of eucalypts on degraded sites in China and the Philippines.

Land and Water Resources

Expenditure for 1993–94 — $3 688 467 (cash basis)

Proportion of research expenditure — 12.2%

Objective

To characterise land and water resources emphasising the identification of soil, climate and water constraints to agricultural production; and to develop technologies that overcome these constraints and advance the sustainable use of soil and water resources.

Program progress

There were 18 current major projects during the year. Two projects were completed. Four major and two small projects commenced. Of the four major projects, two followed on from the reviews of earlier projects and should take research findings closer to practical implementation.

Two others were in new areas of research. One is using findings on the measurement of nitrogen fixation by legumes to improve the productivity of wheat in Nepal and Pakistan. The other, which was planned through one of the small projects, has combined findings from several earlier projects to develop sustainable agriculture in steeplands in the Philippines and Queensland.

Research highlights

- Research in India has shown that the frequency of applications of zinc fertilisers can be reduced from once per year to once in four years.
- Micro irrigation of fruit trees in northern China has now been further evaluated and the technology is ready for wider applications.
- High-yielding, shade-tolerant forages for plantation crop systems have been demonstrated to farmers in Indonesia and Malaysia.

Research on steeplands has confirmed that soil erosion can be reduced through hedgerow planting and simple changes to cultivation practices. One other completed project showed that crops in India needed only one application of zinc fertiliser in four years rather than an annual dose.

Other research developments include: identification of a naturally occurring inhibitor, now the subject of a patent application, that improves the efficiency of urea fertiliser applied to rice in China and Thailand; demonstration to farmers in Indonesia and Malaysia of improved shade-tolerant forages for cattle under coconuts and sheep in rubber plantations; significantly improved soil fertility from organic materials applied to acidic upland soils, and valuable information gathered about the dynamics of organic mulches for soils producing maize and rice crops in the Philippines and Thailand; and development of descriptions of nutrient disorders of taro and sweet potatoes.

AIDAB has been approached for assistance with saltbush plantings for fodder production from saline lands in Pakistan. Another project on microirrigation of fruit trees in China expects to link commercially to an Australian irrigation company.

Research highlights

- In-store drying technology for rice, proven in Thailand and the Philippines, now being trialled in Vietnam at request of the private sector.
- Sulfur dioxide fumigation technology, developed in Thailand for increasing the shelf life of tropical tree fruit, spills over to China and Africa.
- Demonstration of a range of fungal toxins in maize emphasises the seriousness of the mycotoxin problems in Asia and considerably expands their known significance in human

Postharvest Technology

Expenditure for 1993–94 — $2 195 936 (cash basis)

Proportion of research expenditure — 7.3%

Objective

To develop and coordinate a program of research and development linking Australia and developing countries to ensure grain, fruit, vegetables, and fish can be handled, stored, processed and transported safely and economically between harvest and disposal to consumers.

Program progress

Six major projects, three concerning grains and three concerning fruit and vegetables, operated throughout the year. Another two—one concerning fruit and the other fish—were reviewed, and three others concluded.

Two major projects commenced. The first, on disease control and extension of storage life in tropical fruit, builds on successful earlier studies on tropical tree fruit in Southeast Asia and explores a range of non-chemical measures for disease management, including biological control. The second project is concerned with the development and application of simple test kits that initially target the pesticide residue problems in India, and will be suitable for both laboratory and field measurement of pesticide residues in fruit and vegetables, oilseeds, milk, and drinking water.

Three feasibility studies were undertaken as preludes to project development. Their topics were low temperature maize drying in China, purification and handling of shellfish in Asia, and postharvest research and development for vegetables in Southeast Asia.

The program also addressed major postharvest problems in Asia through activities with the GASGA Working Party on Fungi and Mycotoxins in Asian Food and Feedstuffs and the AFHB/ACIAR Working Party on Suggested Recommendations for Fumigation in the ASEAN Region.

Workshops finalising transfer of technology from completed projects were held on postharvest handling technology for tropical tree fruits, and fish drying. Also, ACIAR and CSIRO collaborated with the Australian grain

industry to organise the 6th International Working Conference on Stored-product Protection in Canberra in April 1994.

The postharvest technology network in Asia continued to flourish with approximately 1500 participants now involved. Four postharvest newsletters and four mycotoxin newsletters were published during the year and 52 requests were received for information from the various databases.

MULTILATERAL PROGRAMS

International Agricultural Research Centres

Expenditure for 1993–94 — $8 094 426 (cash basis)

Proportion of research expenditure — 26.8%

Objective

To ensure the effectiveness of, and benefit to Australia and developing countries from, the allocation of funds to the international agricultural research system.

Program progress

ACIAR administers Australia's multilateral contribution to the International Agricultural Research Centres (IARCs). The IARCs are independent non-profit organisations that are internationally funded and carry out research, and related activities, aimed at sustainable improvements in the productivity of agriculture, forestry and fisheries in developing countries. Of the 20 IARCs supported by Australia, 16 are associated with the Consultative Group on International Agricultural Research (CGIAR), a donor group chaired by the World Bank (see table on page 30).

During 1993–94 a strategic plan for the allocation of the funds was developed. The plan considered: a) development (in the developing countries including contribution to economic development, poverty alleviation and equity, and sustainability/environment); b) Australian trade and foreign policy (including economic benefits to Australia in terms of production and trade, regional representation and focus, and commitment to multilateralism and role as honest broker); c) IARC institutional criteria (size and funding needs and organisational effectiveness). The major criterion amenable to quantitative analysis is economic efficiency, so the research priority model developed by the ACIAR Economic Evaluation Unit (EEU) was used to analyse the benefits of the various IARC programs to developing countries and Australian agriculture. On the basis of that analysis and other qualitative criteria, funds were allocated as shown in the table on page 30:

A scheme of Special Purpose Grants was instituted to link the ongoing programs of the IARCs with ACIAR's bilateral programs. Grants paid in 1993–94, either as 1st or 2nd year budget payments, are listed in the table on page 31.

Other activities included the finalisation of the Centre's successful implementation of the Center for International Forestry Research in Bogor Indonesia, on behalf of the CGIAR. ACIAR from now on will interact with CIFOR as it does with other IARCs funded from the Australian aid program. However, we will retain a special relationship as one of the three sponsors of CIFOR.

The Centre cooperated with the Crawford Fund in activities designed to increase public awareness of international agricultural research. A seminar entitled 'A Profit in Our Own Country' was organised at Parliament House in Canberra to inform the public and interest groups about the benefits to Australian agriculture that have flowed from international agricultural research. The Centre also assisted in an inter-departmental review of multilateral aid that gave the IARCs top ranking in almost all criteria—among the more effective multilaterals.

Funds allocated to international centres, 1993–94.

		($)
AVRDC	Asian Vegetable Research & Development Centre, Taiwan	200 000
CABI	Centre for Agriculture & Biosciences International, UK	150 000
CIFOR	Center for International Forestry Research, Indonesia	450 000
CIAT	International Centre for Tropical Agriculture, Colombia	250 000
CIMMYT	International Maize & Wheat Improvement Centre, Mexico	900 000
CIP	International Potato Centre, Peru	755 000
IBSRAM	International Board for Soil Research & Management, Thailand	410 000
ICARDA	International Centre for Agricultural Research in the Dry Areas, Syria	450 000
ICLARM	International Centre for Living Aquatic Resources Management, Philippines	300 000
ICRAF	International Centre for Research in Agroforestry, Kenya	150 000
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics, India	700 000
IFPRI	International Food Policy Research Institute, USA	300 000
IFS	International Foundation for Science, Sweden	75 000
IIMI	International Irrigation Management Institute, Sri Lanka	150 000
ILCA	International Livestock Centre for Africa, Ethiopia	150 000
ILRAD	International Laboratory for Research on Animal Diseases, Kenya	300 000
INIBAP	International Network for Improvement of Bananas and Plantains, France	180 000
IPGRI	International Plant Genetic Resources Institute, Italy	300 000
IRRI	International Rice Research Institute, Philippines	900 000
ISNAR	International Service for National Agricultural Research, Netherlands	250 000

Note to table: Acronyms in **bold** denote non-CGIAR-associated centres

Special purpose grants, 1993–94.

Development of *Stylosanthes* cultivars with stable resistance to anthracnose, high seed yield and seedling vigour	CIAT/CSIRO	2 years	$75 000
Genetic Resources Information Package (GRIP) for wheat researchers	CIMMYT/AWCC[1]	1 year	$54 790
Regional conference/workshop on nematodes and weevil borer affecting bananas in Asia and the Pacific	INIBAP/QDPI[2]/ NSW Agriculture	1 week	$30 000
IITA workshop on cassava toxicity	IITA/ANU[3]	1 week	$24 600
Validation of diagnostic tests for bovine babesiosis and anaplasmosis and studies on strain variation in *Babesia*	ILRAD/QDPI	2 years	$43 050
Development of phenotypic markers for resistance to gastrointestinal nematodes in African small ruminants	ILCA/CSIRO	2 years	$50 000
Commodity price stabilisation: an analysis with linked CGE and sectoral models of Indonesian agriculture	IFPRI/ANU	2 years	$65 000
Agroforestry solutions to rehabilitate *Imperata* grasslands	ICRAF/ANU	2 years	$69 950
Integration of research evaluation efforts at ICRISAT, ACIAR and Philippine NARS	ICRISAT/ACIAR	2 years	$31 428
Analysis of nitrogen and starch in tropical crops using NIR spectroscopy	IRRI/Yanco[4]	9 months	$61 323

1. Australian Winter Cereals Collection
2. Queensland Department of Primary Industries
3. Australian National University
4. Yanco Agricultural College

ECONOMIC EVALUATION

Highlights

- Six tropical fruit postharvest projects were evaluated and shown to have substantial benefits to both partner countries and Australia.
- Evaluation of the impact of CIMMYT wheat research confirms continued high returns to Australia from its funding of this research.
- Several health aspects of proposed projects were evaluated and welfare gains from favourable research outcomes were predicted to be high.

Economic Evaluation Unit

Expenditure in 1993–94 — $224 032 (cash basis)

Proportion of research expenditure — 0.7%

Objectives

To provide systematically based information and economic assessments to support the activities of the research areas of the Centre and to enhance the Centre's public accountability.

Program progress

Activities undertaken during the year included documentation of the databases included in ACIAR's research evaluation information system. The International Economic Data Bank at ANU provided updated FAO data for a wider range of additional commodities. The Unit has also established a computerised database of the research evaluation literature held at ACIAR which will make the Centre one of the foremost repositories for this field in Australia.

Unit members now contribute substantially to ACIAR'S project development process, providing background information for inclusion in project documents and undertaking potential impact evaluations. They also developed a form to guide each completed ACIAR project through a preliminary assessment that includes summary indicators of the scientific output, useable technologies, human capital or capacity building (largely through training activities and postgraduate study) and institution building.

During the year the Unit evaluated six ACIAR postharvest tropical fruit projects, concluding that these projects should have an important impact in both the collaborating partner countries and Australia. It also undertook an evaluation of ACIAR research into fungal toxins in grains and their implications for grain storage and human health in several Southeast Asian countries. The outcome suggests that the presence of toxins carries a large social welfare cost and thus there are high potential gains from research to solve the problem.

During the year the Unit began publishing evaluations in an Economic Evaluation Working Paper Series. The Unit also endeavoured to expand its evaluation work to involve institutions in partner countries, initially testing pilot collaborative arrangements in the Philippines. Additionally an ACIAR-funded Special Purpose Grant enabled the Unit to collaborate with groups at ICRISAT and Philippine national agricultural research centres to investigate integration of research evaluation efforts.

The Unit managed a small project that updated evaluation of the impact of CIMMYT wheats in Australia. Preliminary results confirm the continued high returns to Australia from this international research funding.

COMMUNICATIONS PROGRAM

Achievements against performance indicators in Corporate Plan, 1993–94

1. Production of relevant publications and information of acknowledged quality

- Seventeen scientific publications produced in ACIAR's Scientific Publishing Program; extensive favourable comment received from individual scientists and administrators of overseas and Australian institutions
- Media articles, including two entries in secondary school 'Science and Technology Project Book'
- Ministerial and ambassadorial briefings, especially major ministerial briefing for parliamentary address
- Completion of five half-hour television programs describing ACIAR activities in Australia, the South Pacific, Malaysia, Thailand and China
- Radio interviews with ACIAR scientists broadcast on BBC World Service program 'Farming World'
- Two issues of *ACIAR Newsletter* and one issue of *Partners in Research for Development*
- Press releases issued in association with ACIAR-related events and workshops in Australia and overseas

2. Demand for publications and information

- Letters constantly received from addresses worldwide requesting publications and information about ACIAR
- 10 700 copies of scientific books published during the year placed in key developing-country and international institutions
- 800 copies of ACIAR publications (retail value $30 535) sold to industrialised countries

3. Geographical extent of dissemination of publications and information

Publications and general information about ACIAR sent to 90 countries

4. Information contributed to national and international organisations

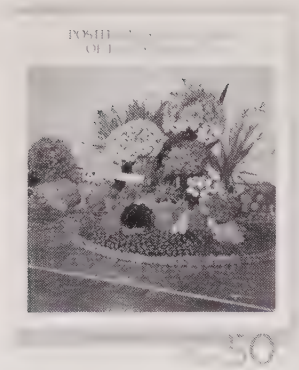
- *ACIAR Newsletter* nos 24 and 25 and *Partners in Research for Development* issue 7 distributed to a mailing list of 4500 addresses, 1600 within Australia and the remainder to readers in around 400 international and developing-country institutes in 69 developing countries and 250 institutes in 21 industrialised countries
- Displays depicting aspects of ACIAR's activities mounted at three conferences and at a book launch in Malaysia

5. Promoting a positive image of Australia's contribution to international agricultural research

- News of ACIAR-facilitated research was again widely broadcast in the media, throughout Southeast Asia particularly and also in the Pacific
- While visiting Australia in April a BBC World Service senior journalist interviewed Australian scientists involved in ACIAR-supported international agricultural research
- Strong interest has been shown in North America for screening five television programs documenting ACIAR activities

6. Extent of awareness, in Australia and internationally, of the Centre's achievements

- Numbers of expressions of interest in new projects continue to exceed ACIAR's resources, indicating that scientists in Australia and developing countries have a broad knowledge of ACIAR's activities
- Large numbers of media articles continue to be published in partner countries
- Media articles and television items about ACIAR research continue to appear in the Australian media



ACIAR produced its fiftieth proceedings during the year, after 11 years of scientific publishing.

Communications Program Report

Expenditure in 1993–94 — $897 993 (cash basis)

Proportion of total ACIAR expenditure — 2.7%

Objective

To contribute to successful outcomes from ACIAR-supported research and development by communication of research results to potential beneficiaries and through promoting awareness of the Centre's activities.

Program focus

The *ACIAR Act 1982* requires that the Centre communicates to persons and institutions the results flowing from the research it commissions. To this end the Communications Program produces and distributes high-quality technical publications covering ACIAR-supported research and development. The Program also communicates information about the Centre itself to provide an appropriate perspective to its stakeholders—scientists, research users, policy makers and the public in partner countries and Australia.

Outputs

The Program published 15 titles in the seminar proceedings, monograph and technical reports series. In addition a monograph, *China's Pastoral Region*, was published with CAB International. ACIAR continued to fulfil its obligations to developing countries by placing complimentary copies of its publications with selected scientific institutions and individuals in target countries.

Information about the Centre's activities appeared in a number of publications including the seventh issue of *Partners in Research for Development*, two issues of the *ACIAR Newsletter* and articles in a school project book. Editions of four program-specific newsletters, which are a major vehicle of communication with research users, were also published. Media articles, some in response to press releases prepared by Program staff, appeared frequently in the press and on radio and television in Australia and overseas.

The Program also directed production of five half-hour programs, designed for network television, detailing aspects of ACIAR-sponsored research in Australia, China, Malaysia, Thailand and the South Pacific. These programs are currently being evaluated for screening by SBS in Australia and international distribution agents have been appointed.

The Program is responsible for technical editing and production of the annual report. It also supervised production and printing of ACIAR's Corporate Plan and individual program strategic plans and their distribution.

A production editor attended four major workshops during the year to finalise papers for publication of workshop proceedings. This includes assistance to scientists for whom English is a second language.

Management

Communications Coordinator Brian Lee accepted a six-month secondment to work with the International Rice Research Institute (IRRI) in the Philippines, beginning in late March. Publications Manager Peter Lynch is acting Coordinator during his absence, and Science Communicator Janet Lawrence is acting Publications Manager.

In February the Director approved the creation of a Professional Officer position to assist mainly in the scientific publishing area. An appointee is expected to come on staff early in the 1994–95 year.

Anutech Pty Ltd continued to store and distribute the Centre's books, and to act as agent for sales within Australia and to industrialised countries. For the 12 months from 1 July 1993 the company sold 800 copies of ACIAR titles with a return to ACIAR of $30 535.

This display about ACIAR postharvest programs informed participants at the Sixth International Working Conference on Stored-product Protection.

Major ACIAR workshops and seminars, 1993–94

- Tuna baitfish in Fiji and Solomon Islands (Nadi, Fiji, 17–18 July 1993)
- Foot-and-mouth disease in Southeast Asia (Lampang, Thailand, 6–9 September 1993)
- Coconut germplasm in the South Pacific (Taveuni, Fiji, 11–12 November 1993)
- *Leucaena leucocephala* and other forage crops (Bogor, Indonesia, 25–28 January 1994)
- Sixth international working conference on stored-product protection (co-sponsored) (Canberra, Australia 18–22 April 1994)

ACIAR Publications, 1993–94

Proceedings

No.47 Biology and Mariculture of Giant Clams. William K. Fitt, ed., 154pp.

No.48 Australian Tree Species Research in China. A.G. Brown, ed., 225pp.

No.49 Sandalwood in the Pacific Region. F.H. McKinnell, ed., 43pp.

No.50 Postharvest Handling of Tropical Fruit. B.R. Champ, E. Highley and G.I. Johnson, ed., 500pp.

No.51 Diagnosis and Epidemiology of Foot-and-Mouth Disease in Southeast Asia. J.W. Copland, L.J. Gleeson and Chanpen Chamnanpood, ed., 209pp.

No.52 Tuna Baitfish in Fiji and Solomon Islands. S.J.M. Blaber, D.A. Milton and N.J.F. Rawlinson, ed., 131pp.

No.53 Coconut Improvement in the South Pacific. M.A. Foale and P.W. Lynch, ed., 82pp.

Monographs

No.22 Food Price Policy in Indonesia. R.R. Piggott, K.A. Parton, E.M. Treadgold and B. Hutabarat. 189pp.

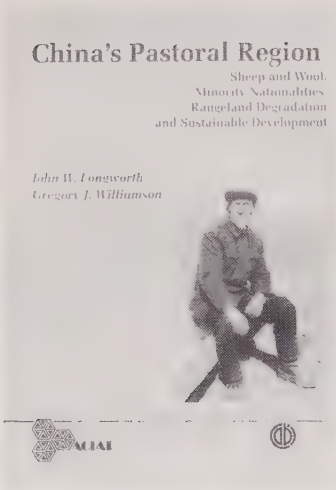
No.23 Escaping from Hunger. B. Lee. 52pp.

No.25 Economics of Commercial Giant Clam Mariculture. C.Tisdell, ed., 306pp.

No.26 Biological Control of Weeds: Southeast Asian Prospects. D.F. Waterhouse. 302pp.

No.27 Recollections of a Pacific Entomologist. R.W. Paine. 120pp.

No.28 The Economics of Papua New Guinea's Tuna Fisheries. H. Campbell, ed., 269pp.



ACIAR and CAB International combined to publish this book on China's pastoral region—the outcome of extensive ACIAR-funded research involving the University of Queensland, the Chinese Academy of Social Sciences and the Chinese Academy of Agricultural Sciences.

Technical Reports

No.27 Selection for Water-use Efficiency in Grain Legumes. G.C. Wright and R.C. Nageswara Rao, ed., 70pp.

No.28 Afforestation and Rehabilitation of *Imperata* Grasslands in Southeast Asia. Nigel D. Turvey. 52pp.

Other Publications

With CAB International. China's Pastoral Region. John W. Longworth and Gregory J. Williamson. 350pp.

Partners in Research for Development 7

ACIAR Newsletter Nos 24, 25

ACIAR Working Papers Nos 38–40

Economic Evaluation Unit Working Papers Nos 2–4

ACIAR Food Legume Newsletter Nos 19, 20

ACIAR Forestry Newsletter Nos 16, 17

ACIAR Postharvest Newsletter Nos 26–29

Australian Mycotoxin Newsletter Vol. 4 (Nos 3 and 4) and Vol. 5 (Nos 1 and 2)

ACIAR Bacterial Wilt Newsletter No. 10

CORPORATE SERVICES PROGRAM

Program expenditure in 1993–94 — $2 150 411 (cash basis)

Proportion of ACIAR expenditure — 6.5%

Program objective

To facilitate and contribute to the effective management of ACIAR's people and programs.

Program organisation

Program responsibility encompasses the following work areas:

(1) Corporate and Executive Support

(2) Board and Council Support

(3) Policy and Planning

(4) Human Resource Management

(5) Finance and Accounting

(6) Overseas Country Managers

(7) Information and Technology Management

Program activities comprise:

- support services to all areas of the Centre's activities, including executive management
- financial resource and planning services
- information technology systems and services and management information systems and associated user support
- library information and research services
- office management and property services
- corporate and strategic policy and planning advice and development
- secretariat support to the Board of Management, Policy Advisory Council and in-house committees
- development, promotion and monitoring of effective strategies and policies for good people management and greater productivity
- support for the operation of the ACIAR fellowships and training program
- legal arrangements for the operation of the research program and other activities
- overseas in-country managers and liaison with Australian diplomatic missions
- policy papers and briefings on the wider aid program
- liaison and consultation with the Ministers' offices, AIDAB, the Department of Foreign Affairs and Trade and the central agencies.

Financial authority and accounting

ACIAR's financial authority is derived from the *ACIAR Act 1982*, which states that the Centre is a body corporate that may acquire, hold and dispose of real and personal property, may sue and be sued in its corporate name, and may do all things necessary for the performance of its functions.

The accounting practices followed by the Centre are in accord with the *Audit Act 1901* and related legislation, and with accounting standards set down by recognised accounting bodies within Australia. The Centre is responsible for the operation of the ACIAR Trust Fund. Annual financial statements and all financial transactions are subject to examination by the Australian National Audit Office.

The Centre's audited statements of accounts included in this report (Appendix 3) are presented in accrual accounting format. Figures of expenditure by ACIAR programs presented in the body of the report show actual cash transactions during 1993–1994.

Achievements against program performance indicators in Corporate Plan, 1993–94

1. The productivity, efficiency and effectiveness of the Centre's operations

Finance and accounting

- New standards implemented to interface with Department of Finance for all financial exchange have increased the efficiency of the accounts payable process.
- The Centre's Finance and Accounting procedures manual was updated to reflect changes in financial procedures and controls.
- Accounting procedures for the Centre's overseas staff were revised and implemented.
- Finance section staff undertook periods of job rotation to diversify their skills.

Information technology

- The Centre's Information Technology (IT) Committee, the forum for the implementation of the ACIAR's IT plan, reviewed the capacity and flexibility of the Project Management Information System (PMIS) to meet the Centre's future requirements.

- The Centre continued to improve communication linkages with its overseas and interstate staff. An ISDN communications line was established with ACIAR's Fisheries program at the NSW Fisheries Research Institute. Internet was successfully implemented to improve communications with overseas posts and researchers. Upgraded and standardised computing systems were purchased for ACIAR staff located within overseas posts.
- The Centre's computerised internal accounting system continued to be improved throughout the year.

Accommodation

- The Centre undertook an extensive market appraisal of alternative office accommodation to identify suitable premises that would reduce property operating expenses and increase the Centre's operational effectiveness. The recommended option was approved by the Minister and relevant government agencies. Plans are proceeding to relocate in the later part of 1995.

Archiving

- Archiving of ACIAR's files commenced with appropriate staff receiving training in archiving procedures. Ongoing liaison continues with Australian Archives to ensure files are archived according to guidelines laid down by the Commonwealth.

Library

- The library collection was heavily weeded and the remaining titles progressively catalogued and entered onto the library's new database; along with new acquisitions which are routinely added to the database. Two new agricultural databases on CD ROM were purchased.
- The Librarian compiled two bibliographies of research publications emanating from ACIAR projects in China and Thailand.
- The librarian maintained links with other libraries and made investigations into the possibility of making ACIAR's library catalogue available to potential users outside of ACIAR. AIDAB library's acquisitions and current awareness lists were circulated to project coordinators and selected items copied by the Librarian.

Overseas managers

- An ACIAR Manager was appointed in Hanoi to assist with the build-up of an ACIAR program in Vietnam.
- A part-time administrative assistant was appointed for the ACIAR Manager in Beijing.
- The annual liaison meeting of ACIAR's overseas managers was held in Darwin in May 1994.
- All posts employing ACIAR staff (Beijing, Hanoi, Manila, Bangkok, Kuala Lumpur and Jakarta) were visited by ACIAR's Principal Adviser and the Manager, Corporate Services.
- The first review of the terms and conditions of employment of ACIAR's overseas managers resulted in new contracts for managers incorporating improvements in compensation and medical coverage, bonus and severance payments and salary levels commensurate with role and responsibility.

Support services to the research program

- Policy papers were prepared on small projects, the project development cycle, and fellowships and training and the ACIAR Operations Manual was reviewed and updated.

Corporate and strategic planning

- The program facilitated development and production of the Centre's new Corporate Plan for 1994–96, and also assisted with development of program strategic plans.
- The program developed its own business plan for 1993–94.

Secretariat support

- Secretariat support services were provided to nine in-house review meetings and three scientific staff meetings, as well as to the ACIAR Consultative Committee, the Information Technology Committee, the Audit Committee and the Fellowships and Training Committee.

2. The nature of feedback on the Centre's managerial and operational effectiveness from Government, commissioned organisations, partner countries and auditors

- Feedback from, and information exchanged with, partner country collaborators at high level meetings, country consultations, project workshops, reviews and coordination meetings have been positive, indicating client satisfaction with ACIAR's project administration and management strategies and policies.
- External and internal audit reviews during the year highlighted no major problems in the effectiveness of the Centre's operations.
- Liaison and coordination with Australian public sector central and other agencies indicate that ACIAR, as a small agency, is implementing management reforms in a timely, efficient and effective manner.

3. Implementation and acceptance of effective Human Resource Management strategies and the extent of staff commitment, well-being and morale

Performance appraisal

- Performance Appraisal schemes for the Senior Executive Service (SES), the Research Scientists and the Senior Officers continued to operate under the guidelines set by the central agencies. Appraisal programs are linked to the Centre's Corporate Plan and program budgets, and also provide formal mechanisms for ACIAR to meet the training and development needs of its senior staff.
- Nineteen officers were eligible to receive performance pay in 1993–94. Payments in respect of the 1993–94 financial year total $71 157. The following table shows the number of eligible officers in each group and the aggregate amounts of performance pay allocated to each group; because there are less than three individuals in the SES group, that group has been combined with the group below it to preserve confidentiality.

	Number of officers	Performance pay allocated
SES, Senior Officers A and B and equivalents	15	$68219
Senior Officers C and equivalents	4	$2938

Two officers received performance pay in the distribution range 60–80 per cent of the maximum for their levels, 15 officers received performance pay in the distribution range 40–60 per cent of the maximum for their levels, and two officers received performance pay in the distribution range 0–20 per cent of the maximum for their levels.

Workplace bargaining

- ACIAR moved through the staff education phase and consultation phases of Workplace Bargaining implementation. Seminars were held to inform staff of the provisions of the framework and of progress in other APS agencies, and to stimulate thought about possible productivity improvements. Opportunities provided by regular staff meetings and the electronic mail system were used to sustain staff interest and encourage participation. An internal bulletin was produced to reinforce the information given in the seminars and to provide further information on developments. Eight bulletins were produced in 1993–94.
- In December 1993, a ballot was taken to determine whether staff wished to proceed with the implementation of Workplace Bargaining. Staff indicated a strong preference to proceed. Consultation was undertaken, a working group was formed, and suggestions were sought from staff on productivity improvements and other changes. While many suggestions were very useful, and several were suitable for inclusion in an agreement, it remained difficult to identify measures to produce sufficient savings for a base salary increase.
- A draft agreement is in preparation as a basis for negotiation with the Community and Public Sector Union—the only union represented in ACIAR.
- Consideration was given to a workplace bargaining agreement in combination with the Department of Foreign Affairs and Trade (DFAT) or with AIDAB, but this did not proceed because of different budgetary arrangements and separate workplaces, as well as difficulties being experienced by both DFAT and AIDAB.
- The option of pooling Senior Officer Performance pay, and including Senior Officers in an agreement, was examined, with the majority of Senior Officers being in favour of pooling.

Occupational Health and Safety

- ACIAR maintains an OH&S subcommittee, which reports to the ACIAR Consultative Committee.
- The Centre continued its commitment to the Employee Assistance Program and also contracted EASACT to conduct stress management courses for ACIAR staff.
- Other OH&S initiatives included screen based equipment eye tests, first aid officer update and training, and appointment and training of new floor/fire wardens.
- There were no reported incidences or near incidences of accident/injury during the year.

Staff development

- The ACIAR staff development and consultation program for Administrative Services Officers grades 1–6 staff was reviewed to incorporate competency assessments, and staff consultations were held in parallel with the Performance Appraisal Schemes for senior staff.

- A Human Resource Development (HRD) strategy was implemented. This included provision of access to the Australian Training Register. Staff development activities continued to receive a high percentage of expenditure and level of commitment, and opportunities for higher duties and rotation were maximised. Staff were encouraged to undertake formal competency-based training courses and to utilise studies assistance.
- An HRD database was developed to monitor training expenditure and help evaluation of outcomes, and more accountable nomination procedures were implemented.

Industrial Democracy

- The Centre's Industrial Democracy Plan was reviewed, terms of reference for in-house committees were developed and committee membership was rotated to ensure effective participation of all staff groups.
- The ACIAR Consultative Committee met seven times in the year. Staff agreed that the committee also function as the Centre's Workplace Bargaining Committee. Standard matters considered by the Committee included: corporate and strategic planning; occupational health and safety; equal employment opportunity; staff training and development; human and financial resource planning; information technology; workplace reforms and workplace bargaining

Equal Employment Opportunity

- A new EEO program for 1994–96 was developed and promoted after considerable consultation within ACIAR and with the Public Service Commission and other agencies. Program targets were on schedule at June 1994.
- There were no formal EEO grievances or complaints of harassment in the year.

Human Resource Management (HRM) initiatives

- Staff were provided with regular briefings on current HRM topics, including initiatives in the areas of 'family friendly' policies, work and family strategies, competency-based training, etc. Staff indicated that they were kept well informed of developments.
- The following policy documents were developed or reviewed: Travel Policy, Travel Insurance Provisions, Conditions of Service and Entitlements, ACIAR Code of Ethics, Official Hospitality Policy, Staff Development Policy and Competency-Based Training, Studies Assistance Policy.

Personnel operations

- AIDAB continued to provide assistance in the payment of ACIAR salaries and determination of entitlements.
- A review of the Centre's personnel operations was initiated, staff selection guidelines were improved, and the personnel delegations reviewed.
- An AIDAB officer undertook a 3-month secondment as ACIAR personnel officer to enhance staff relations and service provision.

Freedom of Information

- There were no matters or requests arising under Freedom of Information legislation.

4. Regular and effective communication with the Board and Council

- Secretariat support services were provided to four Board of Management meetings, two of which were held in partner countries and involved an associated program of visits to ACIAR projects.
- Following ministerial consultation and Executive Council processes, a new President of the Council/Chairman of the Board was appointed, seven Council and two Board members were appointed or reappointed, and the Director of ACIAR was reappointed for a further term.

5. The effectiveness and quality of the fellowships and training scheme

- The Overseas Student Program Section within AIDAB continued to monitor ACIAR fellowships and AIDAB Regional Offices around Australia provided welfare and academic support to ACIAR fellows under an arrangement endorsed by the Director General of AIDAB to continue until June 1995.
- Forty-two applications were considered by the Committee for the academic year 1995 with five males and three female candidates being selected for an award (2 China; 1 India; 1 Indonesia; 2 Philippines; 1 Sri Lanka; 1 Western Samoa).
- The fellowships selection guidelines were reviewed to take account of factors such as ACIAR's geographic mandate, program distribution and gender balance.
- Work commenced on preparation of a training policy paper.

6. The effectiveness of the legal framework within which ACIAR's activities are conducted

International negotiations

- The ACIAR program in China was extended to include activities with the Chinese Academy of Sciences, the Ministry of Forestry, the Ministry of Internal Trade and the State Science and Technology Commission.
- The ACIAR/AARD arrangement was extended for 1 year to ensure that ACIAR's program in Indonesia was not disrupted pending discussions between Australia and Indonesia on the General Agreement for Development Cooperation and the Science and Technology Agreement.
- Negotiations commenced to enable ACIAR to extend its activities into Vietnam.
- Negotiations commenced on replacement umbrella and subsidiary arrangements in India, Malaysia and Philippines.

Domestic negotiations

- ACIAR's domestic legal framework was reviewed to ensure timeliness and effectiveness with input invited from domestic clients including the CSIRO.
- A standard ACIAR contract for services was developed.
- A review of the ACIAR Project Agreement (Standard Conditions) commenced.

Intellectual Property Rights (IPR)

- ACIAR was involved in the resolution of ownership and equitable distribution of IPR for several projects.
- A 'plain English' pamphlet was commenced for distribution to domestic and international clients to explain ACIAR policy on IPR.

In-house procedures

- Responsibility for the preparation and monitoring of international and domestic arrangements was devolved to the research area following an in-house procedure review. Appropriate guidelines and reference documents were developed.

7. The number of, quality of, and satisfaction with country consultations and briefing papers

- Successful high level country consultations were held with Thailand, the South Pacific and Indonesia.
- Briefing papers were prepared on program activities in the Southeast Asian region and the South Pacific for external agencies, largely AIDAB and the Department of Foreign Affairs and Trade.

8. Effective working relationships with central and other APS agencies and AIDAB

- The Centre continued to maintain open and effective channels of communication with the Ministers' offices in the portfolio.
- ACIAR responded to a number of APS surveys and inquiries and ACIAR representatives attended or contributed to meetings and seminars arranged to inform agencies about changing work practices and policy initiatives within the APS, and also to generate debate on the ramifications of these for each agency. Reports of these meetings were conveyed to staff.
- Regular meetings were held with senior officials of AIDAB, and the Corporate Services program developed a close relationship with the corporate support staff of AIDAB; staff interchanges occurred to the mutual benefit of both organisations, ACIAR participated in AIDAB induction programs, and ACIAR staff have access to AIDAB's staff development program and the AIDAB School Holiday Child Care program.
- Consultation with both AIDAB and the Department of Foreign Affairs and Trade occurred on a range of issues including workplace bargaining, Freedom of Information, and Human Resource Development, as well as in relation to portfolio submissions and responses.

9. The program is managed effectively within budget allocation, and in a disciplined and rigorous manner

- ACIAR's financial authority is derived from the *ACIAR Act 1982*, which states that the Centre is a body corporate that may acquire, hold and dispose of real and personal property, may sue and be sued in its corporate name, and may do all things necessary for the performance of its functions.
- Accounting practices followed by the Centre were in accord with the *Audit Act 1901* and related legislation, and with recognised accounting standards; the annual financial statements and all financial transactions are subject to examination by the Australian National Audit Office.
- Internal audit services were provided by Price Waterhouse under a contractual arrangement and were in line with an audit plan approved by the Centre's internal Audit Committee.

APPENDIX 1

ACIAR RESEARCH PROJECTS BY PROGRAM, 1993–94

Animal Sciences

8911 Identification of mineral elements limiting sheep production in northern China

8913* Ecological and host-genetic control of internal parasites of small ruminants in the Pacific Islands

9011* Improved methods for the diagnosis and control of bluetongue in small ruminants in Asia

9028* Improved methods in the epidemiology and control of mites and other diseases of bees in Papua New Guinea

9047 Genetic variation, resistance to acaricides, and reactivity in ticks that infest cattle in Zimbabwe and Australia

9049 Evaluation of antigens for vaccination against liver fluke in cattle and buffalo in Indonesia

9116 Fowl cholera vaccines for Asia

9117 Management of footrot in small ruminants in hill districts of Nepal

9118 Improved methods for the diagnosis and control of bovine babesiosis and anaplasmosis in Zimbabwe and Australia

9119 Towards effective control of infectious bursal disease and infectious bronchitis in poultry

9123 Control of fasciolosis in cattle and buffalo in Indonesia

9132 Strategies for sustainable control of gastrointestinal parasites of ruminants using urea-molasses blocks

9202 The diagnosis and control of haemorrhagic septicaemia in Indonesia

9205 Improved diagnosis and control of infectious coryza in China and Australia

9301 Studies of the epidemiology and control of bluetongue in China

Animal Sciences/Forestry

9001 Improved management for production of honey and pollination of tropical forests by bees in Indonesia

Crop Sciences

8702 Citrus rootstock improvement

8918 Biological control of water hyacinth in Thailand

8919* Biology and control of fruit flies in Thailand and Malaysia

8920* The identification and control of pest fruit flies of the South Pacific

8929* Utilisation of entomopathogenic nematodes to control insects in China

Locations of ACIAR projects, 1993–94

Asia
China
India
Indonesia
Laos
Malaysia
Nepal
Pakistan
Philippines
Sri Lanka
Thailand
Vietnam

South Pacific
Cook Islands
Fiji
Tonga
Kiribati
Niue
Papua New Guinea
Solomon Islands
Vanuatu
Western Samoa

Africa
Kenya
Nigeria
Zimbabwe

9007* Cassava cyanide: improved techniques for estimation, and influence of environment on concentration

9012 Flowering behaviour and subsequent productivity of mangoes

9015 New approaches to the control of bacterial wilt (*Pseudomonas solanacearum*) in tomato and other vegetable and crop plants

9017 Improved diagnosis and control of peanut stripe virus

9025* Coconut improvement

9033* Banana improvement in the Pacific Islands

9034* The cause and control of kava dieback in the South Pacific

9040* Soybean improvement in Thailand

9045 Plant improvement of rainfed lowland rice in drought-prone areas of Thailand and Laos

9107 Control of papaya ringspot virus in the Philippines by development of PRSV resistant hybrids

9110 Biological control of *Chromolaena odorata* in Indonesia and the Philippines

9111 Biological control of breadfruit mealybug in the Pacific

9216 Selection for water-use efficiency in legumes

9221 Nucleotide sequence determination of cadang-cadang viroids in the Pacific area

9305 Integrated control of citrus pests in China

9306 Nutrient composition of indigenous and other Pacific food crops

9307 Biological control of green vegetable bug in Papua New Guinea

9308 Biological control of fruit piercing moth in the South Pacific

9317 Application of plant tissue culture techniques to the propagation and breeding of tea in Indonesia

Economics and Farming Systems

8811 Economic aspects of raw wool production and marketing in China

8903 Economic policies for the Philippines sugar industry

8928* Economics of the tuna fisheries industry in Papua New Guinea

9020 The socioeconomic assessment of native forest preservation proposals in Vanuatu: implications for forest management

9022* Economic policy choices for rural development in Papua New Guinea

9038 Analysis of policies affecting the Indonesian agricultural sector

9039 Government policies in the Philippine beef industry

9109 The world market for coconut products: an economic analysis from the perspective of the Philippines

9211 Evaluation of soil conservation technologies for upland farming systems in the Philippines

9212 Optimal land use in Sri Lanka with particular application to land degradation in the plantation industries

9228 The emergence and integration of regional grain markets in China

Fisheries

9130 Improving fish production in freshwater aquaculture and in estuaries by reducing losses due to epizootic ulcerative syndrome

9131 Pacific Island pearl oyster resource development

9206 Genetic identification and stock improvement of tilapia in Malaysia and Fiji

9207 Replacing fishmeal in aquaculture diets

9304 Stock assessment of coral reef fisheries

Forestry

8736 Increasing productivity of casuarina and eucalypt plantations by inoculation with selected symbiotic microorganisms

8809 Australian hardwoods for fuelwood and agroforestry II

9043 Multipurpose tree and sandalwood silviculture in east Indonesia

9044 Increasing productivity of eucalypt plantations in China by inoculation with ectomycorrhizas and nutrient application

9114 Nutrition and mycorrhizal requirements of tropical trees for plantation and agroforestry systems

9115 Improving and sustaining productivity of eucalypts in Southeast Asia

9126 Improvement of tree establishment for tropical dryland conditions in east Africa

9127 Predicting tree growth for general regions and specific sites in China, Thailand and Australia

9208 Tree establishment technologies in the Philippines

9227 Australian acacias for sustainable development in China, Vietnam and Australia

9310 Physiology and genetic improvement of *Acacia auriculiformis*

9316 Tree growing on salt affected lands in Asia

Land and Water Resources

8366* Zinc deficiency in Vertisols of India and Australia

8829 Biological nitrogen fixation by soybeans in rotation with rice

8840 Effect of land management on the hydrology and erosion of agricultural catchments in West Java, Indonesia

8904 Management of acid soils for sustainable food crop production in the humid tropics of Asia

8938 Management of clay soils under lowland rice-based cropping systems

9048 Efficient use of water in fruit production on the North China Plain

9101 Diagnosis and correction of mineral nutrient disorders of root crops in the Pacific

9102 Nutrient management in rainfed cropping systems

9103 Environmental impact of agricultural practices on water resources of the Kelantan Plain, Malaysia

9113 Integration of forages with plantation crops for sustainable ruminant production

9120 Management of boron and zinc in oilseed crops in China

9201 Sustainable cropping systems for tropical steeplands

9209 Conservation/zone tillage research for dryland farming

9210 Management of legume nitrogen fixation for rainfed cereal production in Pakistan, Nepal and Australia

9222 Groundwater control measures for salinity management and agriculture in the Khon Kaen area, northeast Thailand

9302 Forage shrub production from saline and/or sodic soils in Pakistan

9303 Forage development for the red soils of south central China

Postharvest Technology

8845 Outdoor storage of grain in plastic enclosures in the humid tropics

9008 Applications of in-store drying in the grain industry in Southeast Asia

9009* Increasing efficiency of integrated pest control in grain storage and minimising pesticide residues by use of grain protectants

9035 Integrating grain protectants into storage pest management

9051 Development of heat systems for quarantine disinfestation in tropical fruit

9105 Development of simple edible coatings for postharvest life extension of fruit, vegetable and root and tuber crops

9309 Development and application of simple test kits for pesticide residues in plant derived foods

9313 Disease control and storage life extension in tropical fruit

9321 The development of decision-support tools for managing pests in grain storage

* Denotes project finished during 1993–94

APPENDIX 2

INFORMATION PRESENTED IN PAST ANNUAL REPORTS AND NOW AVAILABLE ON REQUEST

Institutions collaborating on ACIAR projects
John Allwright (formerly ACIAR) Fellowships Scheme
Crawford Fund for International Agricultural Research
ACIAR–AIDAB collaboration
Training and development
ACIAR Consultative Committee report
Workplace bargaining
Internal audit report
Staff development policies and annual report
Equal Employment Opportunity (EEO) Program and Annual Report
Industrial Democracy Program and Annual Report
Freedom of Information statement
Occupational Health and Safety (OH&S) Policy and report
Consultants register
Staff publications list

APPENDIX 3

RECONCILIATION OF APPROPRIATIONS AND RECEIPTS TO PROGRAM ELEMENTS

ACIAR	[A] 1993–94 Estimate $('000)	[B] 1993–94 Actual $('000)	[C] 1994–95 Estimate $('000)	[D] Variation (c-b)/b (%)
Financial				
Running Costs				
Salaries	2353	2378	2242	-5.72
Administration	2434	2434	2478	1.81
Legal Services	15	15	15	0.00
Running Costs Appropriation	**4802**	**4827**	**4735**	-1.91
Appropriation Bill No. 1				
Program Costs				
Domestic programs	20783	20752	23717	14.29
International Programs	8086	8092	8263	2.11
Total Appropriations	**33671**	**33671**	**36715**	9.04
Plus Opening Balance of the Trust Fund	1144	1144	1617	41.35
Less Closing Balance of the Trust Fund	1144	1617	–	–
TOTAL OUTLAYS	**33671**	**33198**	**38332**	15.46

Staffing

	1993/94 Actual	1994/95 Estimate
Staff years	44.6	45.1

Note: ACIAR operates a Trust Account for the purposes of Section 62A of the Audit Act 1901.

The balance of the Trust Account is carried forward from one year to the next.

APPENDIX 4

FINANCIAL STATEMENTS

Statement by the Board of Management

In the opinion of the Board of Management of the Australian Centre for International Agricultural Research the financial statements show fairly:

(a) the Centre's operating results for the year ended 30 June 1994,

(b) the Centre's financial position as at the end of 30 June 1994, and

(c) the Centre's cash flow during the year ended 30 June 1994.

The statements have been prepared in accordance with the Guidelines for Financial Statements of Public Authorities and Commercial Activities issued by the Minister for Finance.

R.G. Garnaut
Chairman

GHL Rothschild
Director

Signed this 14th day of October 1994

AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH
OPERATING STATEMENT FOR YEAR ENDED 30 JUNE 1994

	(Note)	1993/94 $	1992/93 $
COST OF SERVICES			
Operating expenses			
Research program	(5.1)	31,034,491	26,884,835
Communications program		896,845	717,237
Corporate Services program	(5.2)	2,671,978	2,817,795
Changes to non-current asset capitalisation threshold	(7.2.1)	-	47,361
Total operating expenses		**34,603,314**	**30,467,228**
Operating revenues from independent sources			
Sale of publications		21,625	13,542
External funds revenue	(4.2)	541,424	2,180,578
Effects of depreciation rate changes of non-current assets	(7.2.2)	-	92,590
Other revenue		5,088	984
Total operating revenues from independent sources		**568,137**	**2,287,694**
Net cost of services		**34,035,177**	**28,179,534**
REVENUE FROM GOVERNMENT			
Parliamentary appropriations received	(4.1)	33,670,000	29,504,000
Resources received free of charge	(2)	19,698	17,772
Liabilities assumed by Government	(12)	393,985	335,500
Total revenue from government		**34,083,683**	**29,857,272**
Operating Result	(9.1)	**48,506**	**1,677,738**
Accumulated operating results at beginning of financial year		3,770,037	2,092,299
add: Adjustments for Research Projects Brought to Account	(5.1)	(22,992,042)	-
Adjusted Accumulated Operating Results at beginning of financial year		(19,222,005)	-
Accumulated operating results at end of financial year		**(19,173,499)**	**3,770,037**

The accompanying notes form part of these accounts

AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH
STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE 1994

	(Note)	1993/94 $	1992/93 $
CURRENT ASSETS			
Cash	(6.1)	1,749,100	1,315,841
Receivables		132,653	13,037
Other	(6.2)	22,150	3,214,608
Total current assets		**1,903,903**	**4,543,486**
NON-CURRENT ASSETS			
Property, plant and equipment	(7.1)	430,428	499,545
Total non-current assets		**430,428**	**499,545**
Total assets		**2,334,331**	**5,043,031**
CURRENT LIABILITIES			
Creditors	(8.1)	65,607	226,481
Provisions	(8.2)	351,512	317,953
Research Projects	(8.4)	12,438,861	-
Other	(8.3)	89,248	162,651
Total current liabilities		**12,945,228**	**707,085**
NON-CURRENT LIABILITIES			
Provisions	(8.2)	621,795	565,909
Research Projects	(8.4)	7,940,807	-
Total non-current liabilities		**8,562,602**	**565,909**
Total liabilities		**21,507,830**	**1,272,994**
Net assets		**(19,173,499)**	**3,770,037**
EQUITY			
Capital		-	-
Accumulated operating results		(19,173,499)	3,770,037
Total equity		**(19,173,499)**	**3,770,037**

The accompanying notes form part of these accounts

AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH
STATEMENT OF CASH FLOWS FOR YEAR ENDED 30 JUNE 1994

	(Note)	1993/94 $	1992/93 $
CASH FLOWS FROM OPERATING ACTIVITIES			
Inflows:			
Parliamentary appropriation		33,670,000	29,504,000
External funds for CIFOR		450,000	415,142
Trust fund - Other		81,754	8,115
External funds - Other		40,490	-
Interest earned on external funds		10,978	82,076
		34,253,222	30,009,333
Outflows:			
Corporate Services Program		(2,069,670)	(2,739,382)
Communications Program		(899,524)	(720,891)
Research Program		(30,762,657)	(26,963,565)
		(33,731,851)	(30,423,838)
Net cash used in operating activities	(9.1)	**521,371**	**(414,505)**
CASH FLOWS FROM INVESTING ACTIVITIES			
Outflows:			
Payments for Property, plant & equipment		(88,112)	(173,425)
Net cash used in investing activities		**(88,112)**	**(173,425)**
Net increase or (decrease) in cash held		**433,259**	**(587,930)**
Cash at beginning of reporting period		1,315,841	1,903,771
Cash at end of reporting period	(6.1)	**1,749,100**	**1,315,841**

The accompanying notes form part of these accounts

Australian Centre for International Agricultural Research
Notes to and Forming Part of the Financial Statements
For the Year Ended 30 June 1994

1. Summary of Significant Accounting Policies

1.1 The accompanying accounts are prepared in accordance with the historical cost convention, encompass the accrual and going concern bases and do not reflect current valuation of non-monetary assets.

The Centre is a statutory authority under the Australian Centre for International Agricultural Research Act 1982. The accounts have been prepared in accordance with the Act and the Guidelines for Financial Statements of Public Authorities and Commercial Activities.

Figures in the accompanying accounts and notes are expressed in Australian currency.

The Centre complied with the Statement of Accounting Concepts SAC 4 in the preparation of these statements. The application of SAC 4 had a number of implications for ACIAR in the reporting of items and in particular affected research project expenditure, liabilities, prepayments and accumulated operating results.

1.2 Depreciation of Non-Current Assets

Non-current assets are depreciated over their estimated useful lives using the straight line method. Assets are first depreciated in the year of acquisition.

The Centre has a two rate system whereby assets of an electronic nature are depreciated at the rate of 20%pa and all others at 10%pa.

The capitalisation threshold for non-current assets is $2,000. Purchases of less than $2,000 are expensed in the year of purchase.

1.3 Provisions for Annual and Long Service Leave

The Long Service Leave provision covers the pro rata entitlement (at 30 June 1994) of staff who have at least five years eligible service. Included in the calculations are adjustments for staff who join or leave the Centre during the current financial year. The annual leave provision covers the pro rata entitlement of staff annual leave at 30 June 1994

1.4 Other Revenue

The provisions of the Australian Centre for International Agricultural Research Act 1982 enable the Centre to receive moneys from sources other than Parliamentary appropriation for purposes connected to the performance of its functions. This revenue is used to promote agricultural research under terms and conditions agreed between the Centre and the other party. Monetary balances on hand at 30 June for completed activities are accrued as Advances for Research.

1.5 Superannuation

Staff of the Centre are employed under the Public Service Act and contribute to the Commonwealth Superannuation Scheme and the Public Sector Superannuation Scheme. Because funding of the Centre is principally derived from Parliamentary appropriation and the Centre does not operate as a commercial statutory authority, no cost is accrued to the Centre for the amount contributed by the Commonwealth to support the scheme.

1.6 Taxation

Under section 38 of the Australian Centre for International Agricultural Research Act 1982, the Centre is not subject to taxation under a law of the Commonwealth or of a State or Territory.

1.7 Research Projects

The treatment of research projects has changed from previous years and is in accordance with SAC 4. Research projects are reported as current year expenditure for the full term of the project in the year the project was approved. See also Note 5.1.

1.8 Economic Dependency

The Australian Centre for International Agricultural Research is dependent on the appropriation of moneys by Parliament to fund the majority of its operations.

1.9 Comparative Figures

Where applicable, prior year comparative figures have been restated to reflect the current year's format of financial statements.

2. Resources Provided Free of Charge to the Centre

Personnel services provided by the Australian International Development Assistance Bureau (AIDAB) are provided free of charge to the Centre and accordingly are reflected as revenue and expenses in the Operating Statement. The estimated cost of the services is $17,500.

Financial services relating to cheque production and direct credit systems provided by the Department of Finance is estimated at $2,198.

3. Auditors Remuneration

The Auditor-General has audited the 1993/94 financial statements of the Centre at an estimated cost of $20,500 ($20,500 in 1992/93). This amount has been accrued in the 1993/94 financial statements. No other fees have been paid by ACIAR to the Australian National Audit Office

4. Revenue

4.1 Parliamentary Appropriation

	1993/94 $	1992/93 $
Appropriation Act No. 1	33,670,000	29,504,000

4.2 External Funds Revenue

The 1993/94 sources of external funds revenue were as follows:

	1993/94 $	1992/93 $
CIFOR	500,934	2,180,578
GRDC	18,975	-
ACDI	21,515	-
TOTAL REVENUE	541,424	2,180,578

The above external funds provided for research or projects are subject to specified terms or conditions.

5. Expenses

5.1 Research Program

	1993/94 $	1992/93 $
Animal Sciences	3,791,118	2,954,221
Crop Sciences	5,137,241	2,991,162
Economics and Farming Systems	1,862,054	1,440,245
Economic Evaluation Unit	64,021	-
Fisheries	2,047,997	861,930
Forages	-	487,241
Forestry	954,732	4,176,364
Land and Water Resources	3,339,513	-
Plant Nutrition	-	1,139,612
Postharvest Technology	2,677,071	1,818,406
Soils, Water and Land Use	-	1,300,603
CGIAR	8,094,628	7,895,537
Training	1,302,248	-
Australian Tree Seeds Centre	465,254	-
Research Support - Salaries	1,177,566	1,035,689
- Other	121,048	783,825
TOTAL RESEARCH	31,034,491	26,884,835

The Forages, Plant Nutrition and Soils, Water and Land Use Programs were combined to form the new Land and Water Resources program.

The Centre's change in accounting policy in 1993/94 in accordance with SAC 4, has meant that research projects are reported as current year expenditure for the full term of the project in the year the project was approved. The result of these changes is reflected in the 'Adjustments for Research Projects brought to Account' figure for 1993/94 of $22,992,042. This figure comprises payments and commitments for on-going research projects which commenced prior to 1993/94. An amount of $11,523,452 being payments made during 1993/94, and $11,468,590 being future commitments.

5.2 Corporate Services Program

	1993/94 $	1992/93 $
Executive Management		
Board of Management		
& Policy Advisory Council		
Travel	80,205	92,269
Supplies and Services	8,946	5,867
Honoraria	9,739	12,858
TOTAL EXECUTIVE MANAGEMENT	98,890	110,994
Centre Administration		
Salaries	578,806	745,499
Rent	503,933	506,731
Computer Services	122,704	133,510
Consultancy Services	45,391	170,998
Incidentals	120,098	73,371
Office Requisites	86,476	141,037
Postage and Telephone	140,099	138,288
Recruitment Expenses	24,458	11,070
Travel	118,602	88,030
Library	24,424	21,017
TOTAL CENTRE ADMINISTRATION	1,764,991	2,029,551
Depreciation	157,462	150,377
Long Service Leave	67,304	103,735
Annual Leave	169,648	69,866
Resources Received Free of Charge	19,698	17,772
Liabilities assumed by government	393,985	335,500
TOTAL CHARGES	808,097	677,250
TOTAL CORPORATE SERVICES	2,671,978	2,817,795

6. Current Assets

6.1 Cash

6.1.1 The Centre's finances are transacted through the Australian Centre for International Agricultural Research Trust Fund (being a Trust Account for the purposes of Section 62A of the Audit Act 1901).

6.1.2 The Centre also has a bank account for transactions associated with moneys received from external donors. Balances are invested from time to time, and proceeds are dealt with in accordance with the wishes of the fund donors.

6.1.3

	1993/94 $	1992/93 $
Trust Fund	1,617,312	1,144,405
External Funds	129,738	161,386
Travel Advances	1,622	50
Cash at Hand	428	10,000
TOTAL CASH	1,749,100	1,315,841

6.2 Other Current Assets

	1993/94 $	1992/93 $
Other Current Assets	22,150	3,214,608
TOTAL OTHER CURRENT ASSETS	22,150	3,214,608

The basis of ACIAR's operations is to enter into collaborative research agreements with various research institutions and to advance (pre-pay) moneys in accordance with the terms of these agreements. In previous years, advances of funds to contracted organisations which were unspent and uncommitted as at 30 June were treated as pre-payments. According to SAC 4, pre-payments of research projects in advance are more appropriately treated as expenses. This treatment is reflected in the reduced 'Other Current Assets' figure for 1993/94.

7. Non-Current Assets

7.1 Property, Plant and Equipment

The Centre's assets appear at cost less accumulated depreciation.

	1993/94 $	1992/93 $
Plant and Equipment - at cost	1,257,159	1,202,361
Less: Accumulated Depreciation	826,731	702,816
Net book value as at 30 June	430,428	499,545

7.2 Prior Year Changes to Non-current Asset Value

7.2.1 As of the 1992/93 financial year, the non-current asset threshold was increased from $500 to $2,000. Assets purchased in previous years with individual costs of between $500 and $2,000 were written off in the 1992/93 financial year. The amount of this adjustment was shown as 'Changes to Non-current asset capitalisation threshold' for $47,361 in 1992/93.

7.2.2 Prior to 1992/93 the depreciation rate for assets of an electronic nature was 33.3%. These assets have since been depreciated at a rate of 20% to more accurately reflect their useful life. The amount of this adjustment is shown as 'Effects of depreciation rate changes of non-current assets' for $92,590 in 1992/93.

8. Current Liabilities

8.1 Creditors

This item comprises creditors and expenditure accrued at 30 June 1994 in respect of:

	1993/94 $	1992/93 $
Sundry Creditors & Accrued Expenditure:		
Executive Management	695	-
Centre Administration	45,564	39,853
Communications	1,431	4,110
Research Programs	9,886	99,236
Accrued Salaries	8,031	83,282
TOTAL CREDITORS	65,607	226,481

8.2 Provision for Employee Entitlements

The current and non-current liabilities for provisions are represented by:

	1993/94 $	1992/93 $
Current Liabilities		
Annual Leave	328,730	299,047
Long Service Leave	22,782	18,906
	351,512	317,953
Non-Current Liability		
Long Service Leave	621,795	565,909

8.3 Other - Advances for Research

This item is the balance of funds received from sources other than Parliamentary appropriation which are committed to specific agricultural research projects and which have been completed. According to SAC 4 funds received for specific agricultural research projects which are ongoing are treated as revenue in the year they were received.

8.4 Grants

Under the provisions of SAC 4 future years payments by the Centre for approved research projects are treated as liabilities. Payments to be made during 1994/95 of $12,438,861 are treated as current liabilities and payments to be made beyond 1994/95 of $7,940,807 are treated as non-current liabilities.

9. Notes to Statement of Cash Flows

9.1 Reconciliation of operating results with cash flows from operations

	1993/94 $	1992/93 $
Operating result	48,506	1,677,738
Depreciation	157,462	150,377
Employee Entitlements	89,444	173,601
Abnormal Items	-	(45,229)
Prior years adjustment	(232)	-
(Increase)/Decrease in Other Current Assets	3,192,458	(692,257)
Increase in Debtors	(119,616)	(8,878)
Decrease in Creditors	(234,277)	(1,669,857)
Increase in research projects liability	20,379,668	-
Adjustments for research projects brought to account	(22,992,042)	-
NET CASH USED IN OPERATING ACTIVITIES	521,371	(414,505)

9.2 The definition of cash for the purposes of the Cash Flow Statement means actual cash balances held in the ACIAR Trust account, in bank accounts and cash on hand as petty cash.

10. Commitments for expenditure not brought to account

Estimates of financial commitments payable for office rent, but not provided for, in the accounts at 30 June 1994 are as follows:

	1993/94 $	1992/93 $
Not later than one year	531,149	503,933
Later than one year and not later than two years	177,050	-
TOTAL	708,199	503,933

11. Executives' Remuneration

Remuneration packages received or due and receivable by the Executives whose remuneration was $100,000 or more was as follows:

1993/94 $	1992/93 $
230,279	105,060

The number of executives whose total remuneration falls within the following bands was as follows:

$	1993/94 number	1992/93 number
100,000 - 110,000	1	1
110,000 - 120,000	-	-
120,000 - 130,000	1	-

12. Liabilities Assumed by Government

An amount representing the CSS and PSS superannuation benefits which are to be paid by the Commonwealth and are accruing over the term of the member's period of employment are reported as both a revenue item and an expense item as 'Liabilities assumed by Government'. This is a requirement under Schedule 2, clause 14 of the Guidelines for Financial Statements of Public Authorities and Commercial Activities. Liabilities Assumed by Government appears as an expense under note 5.2.

AUSTRALIAN NATIONAL AUDIT OFFICE

Centenary House
19 National Crt
Barton ACT 2600

our ref:

INDEPENDENT AUDIT REPORT

To the Minister for Foreign Affairs and Trade

Scope

I have audited the financial statements of the Australian Centre for International Agricultural Research for the year ended 30 June 1994. The statements comprise:

- Statement by the Board of Management
- Operating Statement
- Statement of Financial Position
- Statement of Cash Flows, and
- Notes to and forming part of the Financial Statements.

The members of the Board of Management are responsible for the preparation and presentation of the financial statements and the information contained therein. I have conducted an independent audit of the financial statements in order to express an opinion on them to the Minister for Foreign Affairs and Trade.

The audit has been conducted in accordance with Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards, to provide reasonable assurance as to whether the financial statements are free of material misstatement. Audit procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements, and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion whether, in all material respects, the financial statements are presented fairly in accordance with Australian accounting concepts and standards and statutory requirements so as to present a view which is consistent with my understanding of the Centre's financial position, the results of its operations and its cash flows.

The audit opinion expressed in this report has been formed on the above basis.

GPO Box 707 · Canberra Australian Capital Territory 2601 Telephone (06) 203 7300 Facsimile (06) 203 7777

Audit Opinion

In accordance with sub-section 39(2) of the *Australian Centre for International Agricultural Research Act 1982*, I now report that the statements are in agreement with the accounts and records of the Centre, and in my opinion:

(i) the statements are based on proper accounts and records

(ii) the statements show fairly in accordance with Statements of Accounting Concepts and applicable Accounting Standards the financial transactions and cash flows for the year ended 30 June 1994 and the state of affairs of the Centre as at that date

(iii) the receipt, expenditure and investment of moneys, and the acquisition and disposal of assets, by the Centre during the year have been in accordance with the *Australian Centre for International Agricultural Research Act 1982*, and

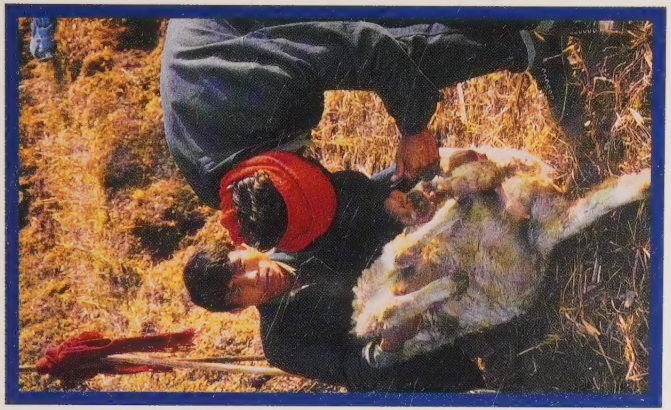
(iv) the statements are in accordance with the Guidelines for Financial Statements of Public Authorities and Commercial Activities.

D.S. Lennie
Executive Director
Australian National Audit Office

Canberra

14 October 1994

Annual Report 1993–94 Australian Centre for International Agricultural Research



ACIAR
AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH